Table of Contents

PA	GE
Part 1 – Introduction	1
Part 2 – Amvic Products	5
2.1 – Amvic ICF Products	5
2.2 – Product & Accessory Packaging	6
Part 3 – Tools, Material and Accessory Requirements	9
3.1 -Tools for Block Installation	9
3.2- Tools for Concrete Pour	10
3.3 - Tools for Utility Installation	10
3.4 - Materials list	10
Part 4 – Construction Overview	11
Part 5 – Window & Door Openings	17
5.1 Window & Door Bucks	17
5.2 - Wood Bucks	18
5.2.1 – Choosing the Lumber	18
5.2.2 - Constructing Wood Bucks	18
5.2.3 - Connecting Wood Bucks to Concrete	19
5.3 - Vinyl Bucks	20
5.3.1 - Advantages	20
5.3.2 - Disadvantages	21
5.3.3 – Steps for Vinyl Buck Construction	21
Part 6 – Steel Reinforcement for Walls	27
6.1 – Overview	27
6.2 – Plan Requirements	27
6.3 – The Purpose of Reinforcing Bars	27
6.4 – Horizontal Reinforcement	28
6.5 – Vertical Reinforcement	28



6.6 - Reinforcement for Wall Openings	29
6.7 – Reinforcement Splicing	29
6.7.1 – Types of Lap Splice	30
6.7.2 – Minimum Requirement for Lap Splice Length	31
6.8 – Lapped Splices for Multiple Concrete Pours	31
6.9 – Designing Reinforcing Steel for Walls	33
6.9.1 – Canada	34
6.9.2 – United States	34
6.10 – Steel Reinforcing Bars and Jobsite Safety	35
Part 7 – Preparing Footings & Slab on Grade (SOG)	37
7.0 – Introduction	37
7.1 – Dowel Placement in Footings/SOG (Slab on Grade)	38
7.2 – Level Foundations	39
7.3 – Outlining Your Project	39
7.3.1 – Outlining Wall Layout	40
7.3.2 – Outlining Windows / Doors	41
7.3.3 – Outlining Rough Size Openings	41
Part 8 – The Installation Process	43
8.1 – Overview	43
8.2 – Mobilization: Material & Tools Positioning	43
8.3 – Course Planning: Determining wall heights & no. of courses per Storey	46
8.3.1 – Single Storey vs. Multi-Storey Construction	47
8.4 – Placing First Course of Block	48
8.5 – Placing the Second Course of Block	53
8.6 – Checking for Level	55
8.7 - Securing First Course to Foundation/SOG	56
8.8 – Placing 3rd & Subsequent Courses of Block	58
8.8.1 - Cutting Block around Door Bucks	58
8.8.1.1 - Elevated Doorways	59
8.8.2- Cutting Forms around Window Bucks	60
8.8.3 – Reinforcing Steel around Wall Openings	60



8.8.4 - Placing the Top Course of Block	61			
8.8.5 - Installing Vertical Rebar	62			
8.9 – Installing Wall Alignment & Bracing	64			
8.9.1- General Application	64			
8.9.2 – Spacing for the Alignment & Bracing System	67			
8.10 –Preparing Bucks for the Concrete Pour	68			
8.11 Additional Bracing	70			
8.12 - Penetrations	73			
8.13 – Suspended Floor Installations	74			
8.13.1 – Ledgers Installed with Anchor Bolts	74			
8.13.2 - Installing Ledgers with the Simpson Strong-Tie [™] ICFLC Ledger Connector	78			
8.14 – Beam Pocket – Floor Joist Directly Bearing on ICF Wall	82			
8.15 - Final Adjustments Prior Pouring Concrete	84			
Part 9 – Special ICF Installation	85			
9.1 – Overview	85			
9.2 - Short Corner Construction	85			
9.2.1 – Short corners using 90° corner blocks with a stack Joint	85			
9.2.2 – Short corners using 90° corner blocks with running bond pattern	86			
9.2.3 – Short corners made of straight Amvic ICF	87			
9.3 – Radius Wall Construction	90			
9.4 – T-wall Construction	94			
9.5 – Brick Ledge Applications	97			
9.5.1 – Installing Amvic Brick Ledge Blocks	99			
9.5.2 – Custom Design Brick Ledge Forms	100			
9.5.3 – Installing Standard Brick Veneer	102			
9.6 - Gable Ends	102			
9.7 - Pre-cast Concrete Floor Systems (Hollow Core/Spancrete)	105			
9.8 - Hambro [®] Composite Concrete Floors				
9.8 - Hambro® Composite Concrete Floors	103 104 106			
9.8 - Hambro® Composite Concrete Floors9.9 - Composite Steel Deck	103 104 106 108			



v

Part 10 - Concrete Basics	113
10.1 – Overview	113
10.2 – Concrete Fundamentals	113
10.2.1 – Concrete Composition	113
10.3 – Quality of a Concrete Mix	115
10.3.1 - Water / Cement Ratio (W/C)	115
10.3.2 - Concrete Strength	115
10.3.3 - Concrete Workability	116
10.3.4 - Concrete Curing	117
10.3.5 - Entrained Air (Micro air pockets)	118
10.3.6 - Entrapped Air (Macro air pockets)	118
10.4 – Concrete Admixtures	119
10.5 – Specifications of Concrete for Amvic ICF	120
Part 11 – Concrete Placement	121
11.1 – Overview	121
11.2 - Pre-Pouring Checklist	121
11.3 – Safety Tips for Handling and Placing concrete	123
11.4 – Rate of Pouring Concrete	124
11.5 – Methods & Equipment for Pouring Concrete	125
11.5.1 - Placing Concrete with a Boom Pump	126
11.5.2 - Crew Size	127
11.6 - Pouring the Concrete	127
11.7 – Quality Control	131
11.7.1 – Slump	131
11.7.2 – Compressive Strength	131
11.8 – Concrete Consolidation	132
11.8.1 - What is Consolidation	132
11.8.2 – Methods of Consolidation	132
11.9 – Using Concrete Vibrators	133
11.9.1 – Recommended Specifications	133
11.9.2 – Guidelines for Concrete Consolidation	134



11.10 – Finishing the Concrete Pour	137				
11.11 - After the Pour: Recheck Wall Straightness and Adjust					
11.12 - Preparing a Blowout Kit	137				
Part 12 – Below Grade Moisture Protection	139				
12.1 – Code Requirements	139				
12.1.1 – Damp-proofing vs. Waterproofing	139				
12.1.2 – Damp-proofing or Waterproofing According to Building Codes	139				
12.1.3 – Foundation / Subsoil drainage system	139				
12.1.4 – Recommendations for Maintaining a Dry Basement	140				
12.2 – Damp-proofing & Waterproofing Applications for Amvic ICF	141				
12.3 – Liquid Applied Damp-proofing / Waterproofing systems	142				
12.4 – Peel & Stick Damp-proofing / Waterproofing systems	143				
12.5 – Dimple sheet Damp-proofing / Waterproofing Systems	144				
12.6 – Parging	145				
	1 4 -				

Part 13 – Interior & Exterior Finish	147
13.1 – Interior Drywall	147
13.2 – Traditional Stucco (Exterior)	147
13.3 – EIFS (Exterior Insulation & Finish System)	150
13.4 – Anchored Masonry Veneer	152
13.5 – Wood, Vinyl, and Fiber Cement Siding	153



Appendix A – Steel Reinforcement for Wall Openings				
A1.0 – Reinforcing Steel for wall opening sides and Sill	157			
A1.1 – Lintels (Door and Window Headers)	158			
A1.2 - Structural Assumptions	161			
A2.1 – Canadian Lintel Tables	163			
A2.2 – US Lintel Tables	235			

Арреі	ndix B – Wall Engineering	309
B1.0 -	- Canada	309
B1.1 -	- CCMC 13043-R	309
B1.2 -	- National Building Code of Canada 2005	309
	B1.2.1 – Application	309
	B1.2.2 – Materials	310
	B1.2.3 – Footings and Foundations	310
	B1.2.3.1 – Application	310
	B1.2.3.2 – Minimum Footing Sizes	311
	B1.2.4 – Foundation Walls	312
	B1.2.4.1 – Application	312
	B1.2.4.2 – Reinforcement for Flat Insulating Concrete Form	212
	B1 2 5 _ Above Grade Walls	315
	B1.2.5 – Above Grade Waits	315
	B1.2.5.2 – Thickness for Flat Insulating Concrete Form Walls	315
	Form Walls	315
	B1.2.5.4 – Openings in Non-Loadbearing Flat ICF walls	316
	B1.2.5.5 – Lintels over Openings in Load-bearing Flat ICF walls	316
	B1.2.5.6 – Framing Supported on Flat ICF walls	317
	B1.2.5.7 – Anchoring of Roof Framing to Top Of Flat ICF walls	317



B2.0 – USA
B2.1 – Prescriptive Method
B2.1.1 – Scope
B2.1.2 – Material Specifications
B2.1.3 – Footings
B2.1.3.1 – ICF Foundation Wall-to-Footing Connection
B2.1.4 – Foundation Wall Requirements 323
B2.1.5 – Above Grade Walls
B2.1.6 – Floor Joist Connections
Appendix C – Coursing and Corner Dimensions
Appendix D – Termites and ICF Construction
D1.0 – Termite Types
D1.1 – Termites and ICF construction
D1.2 – Code Issues and EPS Foam Below Grade 349
D1.2.1 – International Residential Code 2003, Termite Control and EPS Protection
D1.2.2 – National Building Code of Canada 2005, Termite Control and EPS Protection
D2.0 – Termite Protection and Control
D2.1 – Physical Barriers
D2.1.1 – Waterproofing and Termite Barrier System
D2.1.2 – Chemical Treatment of Soil 352
D2.1.3 – Metal Termite Shield 352
D2.1.4 – Particle Sized Barrier
D2.1.5 – Termimesh
D2.2 – Suppression
D2.2.1 – Termite Baits
D2.2.2 – Trap Treat Release (TTR)
D2.2.2 – Trap Treat Release (TTR)



Appendix E – Utility Service Installations				
E1.0 – ICF Wall Penetrations	359			
E2.0 – Electrical Installation	360			
E2.1 – Main Entrance Panel	361			
E2.2 – Electrical Wiring	362			
E2.3 – Conduit	362			
E2.4 – Electric Outlet Boxes	362			
E2.4.1 – Attaching the Electrical Box to the Wall	363			
E3.0 – Plumbing	364			



Preface

Amvic ICFs are the highest quality, most innovative insulated concrete forms available on the market today. Competitive pricing, extensive product distribution and excellent technical support are combined to provide our clients with a simplified approach to a superior finished product at an installation cost less than any other comparable systems.

If any of your questions or concerns are not completely addressed in this manual, please attend one of Amvic's training seminars (check your local area for schedule) or feel free to contact us and our staff will be happy to answer your questions. At Amvic, we pride ourselves in offering our customers an exceptional level of customer service.

Technical Support

Please contact us for any inquiries pertaining to information included in this manual or if you require other technical assistance.

Technical Support 1-877-470-9991 (toll free) 1- 416-410-5674 ext. 129

Amvic Website

The Amvic website is updated regularly with the most current news including testing reports, technical bulletins and evaluation reports. This technical and installation manual is posted on the website.

Amvic website - www.amvicsystem.com

COPYRIGHT ©2006 BY AMVIC INC.



Acknowledgement

Amvic would like to thank all those who participated in the compilation of this manual. Special thanks to:

Bill Juhl Bob Barker John and Cathy Krzic Rory and Tonia Ahern Joe and Racquel Wallace Lindsay and John MacLeod Steve Rentz Norman Williams

Disclaimer

This document is provided for informational purposes only. The information contained in this document represents the current view of Amvic Inc. on the issues discussed as of the date of publication. These opinions as expressed, should not be interpreted to be a commitment on the part of Amvic Inc. and cannot guarantee the accuracy of any information presented after the date of publication. The user assumes the entire risk as to the accuracy and use of this document.

This manual is intended to supplement rather than replace the basic construction knowledge of the construction professional. All structures built with the Amvic Building System must be designed and erected in accordance with all applicable building codes and/or guidance of a licensed professional engineer. In all cases, applicable building code regulations take precedence over this manual.

INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND FREEDOM OF INFRINGEMENT.



References

- 1. **Prescriptive Method for Insulating Concrete Forms in Residential Construction** Prepared by NAHB (National Association of Home Builders) Research Center Inc. Upper Marlboro, Maryland Published by PCA (Portland Cement Association), 5420 Old Orchard Road, Skokie, Illinois, EB118.
- 2. **Structural Design of Insulating Concrete Form Walls in Residential Construction** Prepared by NAHB (National Association of Home Builders) Research Center Inc. Upper Marlboro, Maryland Published by PCA (Portland Cement Association), 5420 Old Orchard Road, Skokie, Illinois, EB212.
- 3. American Concrete Institute (ACI) ACI 318 Building Code Requirements for Structural Concrete ACI 332 Requirements for Residential Concrete, ACI 347 Guide to Formwork for Concrete
- 4. Canadian Standards Association (CSA)
 A23.3 94 Design of Concrete Structures
 A23.1 94 Concrete Material and Methods for Concrete Construction
- 5. **International Code Council (ICC)** Evaluation report no. ESR-1269
- 6. Canadian Construction Materials Centre Evaluation report no. 13043-R
- 7. **State of Florida Building Code** Application # FL814
- 8. **City of Los Angeles** Research Report No. RR 25477





Amvic Insulated Concrete Forms (ICFs)

Amvic insulated concrete forms (ICFs) are hollow, lightweight forms manufactured using two $2^{1/2}$ inch (63.5m), 1.5lbs/cu.ft density expanded polystyrene (EPS) panels which are connected by uniquely designed, high impact polypropylene webs. During construction, the forms are stacked then filled with concrete making stable, durable and sustainable walls.

Amvic ICFs combine the insulating effectiveness of EPS with the thermal mass and structural strength of a reinforced concrete wall. They also offer a "5 in 1" solution that provides structure, insulation, vapor barrier, sound barrier and attachments for drywall and exterior siding in one easy step.

Walls constructed with Amvic ICFs can provide a fire rating of 3+ hours (6, 8 and 10 inch walls), a sound transmission class (STC) of 50 (some wall assemblies exceed this value) and an insulation value of R-22+. By combining the performance R-value of EPS, the stabilizing effects of concrete thermal mass and the reduced air infiltration rates, Amvic ICF walls can perform up to an equivalent insulation value of R-50.



Figure 1.1 – Amvic ICF products



Figure 1.2 – Typical Amvic reversible ICF block

The webs used in Amvic ICF eliminate the need for tie downs and place reinforcing steel most effectively to ensure superior structural strength. The webs are manufactured using more raw material than competing products allowing for superior finishing capabilities and 198 lbs pull out strength for drywall screws. They are also spaced 6 inch (152mm) on center compared to 8 inch (200mm) on center resulting in greater rigidity, which keeps walls straight and plumb during stacking and the pouring of concrete.





Figure 1.3 – Typical Amvic straight ICF block (6" shown)



Figure 1.4 – Cross section of Amvic ICF blocks

Amvic webs connect the EPS panels and terminate with a $1\frac{1}{2}$ inch (38mm) flange which is embedded $\frac{5}{8}$ inch (16mm) beneath the outside surface of the panels. The flange has a height of 15 inches (381mm) in all blocks except the 10 inch (254mm) block which has a flange height of 23 inches (584mm). When the Amvic blocks are stacked, the flanges form a continuous horizontal and vertical grid which is used to attach interior finishes like drywall and exterior finishes like stucco, wood siding and brick veneer. (Please refer to the interior and exterior applications sections of this manual for more details.)





Figure 1.5 – Side view of Amvic ICF straight block showing web flanges

Amvic ICF blocks use the FormLock[™] interlocking system developed by Amvic, which has considerably deeper grooves than competing products. The interlock exists on all edges allowing the blocks to be fully reversible. It also secures the courses together, preventing any movement or leakage during the concrete pour. This unique feature allows Amvic ICF to be stacked quickly, easily and without the need for glue or ties. Amvic's user friendly, easy to install system increases job site efficiency and worker productivity which saves time and money.



Figure 1.6 – Side view of Amvic straight block showing top and bottom interlocking system



Amvic ICFs are available in a variety of sizes allowing for concrete cores of 4, 6, 8 or 10 inches (100, 152, 200, 254mm). Straight, 90-degree corner, 45-degree corner and curved forms are available in most sizes.

Amvic 90-degree corner blocks have a pocket where a square polypropylene tube (corner rod) can be inserted. Its purpose is to provide a nailing point for mechanical attachments such as sheetrock, lathe or siding which would otherwise not exist in the EPS panel.



Figure 1.7 – Typical Amvic ICF corner block with pocket for polypropylene tube

Amvic is the best ICF system available on the market today. Competitive pricing, extensive product distribution and professional technical support are combined to provide customers with a superior product with an installation cost less than comparable systems.



Part 2 – Amvic Products

2.1 – Amvic ICF Products

Please refer to the chart below for Amvic ICF products and dimensions.

	Product	Concrete Core Width	Form Dimension Inches LxHxW (Metres)	Concrete Volume Per Form	Concrete Volume per sq.ft. of wall area	Surface Area Per Form
-	Amvic Straight Reversible Block	4″ (102mm)	48″ x 16″ x 9″ (1.22 x 0.41 x 0.23)	0.066 cu-yd 0.050 m³	0.012 cu-yd 0.009 m³	5.33 ft² 0.50 m²
Ę		6″ (152mm)	48″ x 16″ x 11″ (1.22 x 0.41 x 0.28)	0.099 cu-yd 0.076 m³	0.019 cu-yd 0.014 m³	5.33 ft ² 0.50 m ²
2		8″ (203mm)	48″ x 16″ x 13″ (1.22 x 0.41 x 0.33)	0.132 cu-yd 0.101 m ³	0.025 cu-yd 0.019 m³	5.33 ft² 0.50 m²
Ę		10″ (254mm)	48″ x 24″ x 15″ (1.22 x 0.61 x 0.38)	0.247 cu-yd 0.189 m³	0.031 cu-yd 0.024 m³	8.00 ft ² 0.74 m ²
14		12″ (305mm)	48″ x 24″ x 17″ (1.22 x 0.61 x 0.43)	0.296 cu-yd 0.227 m³	0.037 cu-yd 0.028 m³	8.00 ft ² 0.74 m ²
Maria		4″ (102mm)	[24.5″ + 12.5″] x 16″ x 9″ (0.62 + 0.32) x 0.41 x 0.23	0.037 cu-yd 0.028 m³	0.009 cu-yd 0.007 m³	4.11 ft ² 0.38 m ²
N.U	Amvic	6″ (152mm)	[26.5″ + 14.5″] x 16″ x 11″ (0.67 + 0.37) x 0.41 x 0.28	0.059 cu-yd 0.045 m³	0.013 cu-yd 0.010 m³	4.56 ft ² 0.42 m ²
	90° Corner Reversible	8″ (203mm)	[28.5″ + 16.5″] x 16 ″ x 13″ (0.72 + 0.42) x 0.41 x 0.33	0.083 cu-yd 0.064 m ³	0.017 cu-yd 0.013 m³	5.00 ft ² 0.46 m ²
2	Block*	10″ (254mm)	[42.5"+ 18.5"] x 24" x 15" (1.08 + 0.47) x 0.61 x 0.38	0.226 cu-yd 0.172 m ³	0.022 cu-yd 0.017 m³	10.17 ft ² 0.94 m ²
		12″ (305mm)	[38.48″+ 20.5″] x 24″ x 17″ (0.98 + 0.52) x 0.61 x 0.43	0.243 cu-yd 0.186 m³	0.025 cu-yd 0.019 m³	9.83 ft ² 0.91 m ²
1	Amvic	4″ (102mm)	[21″+ 9″] x 16″ x 9″ (0.53 + 0.23) x 0.41 x 0.22	0.036 cu-yd 0.027 m ³	0.011 cu-yd 0.008 m³	3.33 ft ² 0.31 m ²
2	45° Corner Reversible Block*	6″ (152mm)	$[21.25^{"}+9.25^{"}] \times 16^{"} \times 11^{"}$ $(0.54+0.23) \times 0.41 \times 0.28$	0.053 cu-yd 0.041 m ³	0.016 cu-yd 0.012 m ³	3.39 ft ² 0.31 m ²
R		8″ (203mm)	[22" + 10"] x 16" x 13" (0.56 + 0.25) x 0.41 x 0.33	0.073 cu-yd 0.055 m³	0.020 cu-yd 0.016 m³	3.56 ft ² 0.33 m ²
1	Amvic Tapered Top Block	6″ (152mm)	48" x 16" x 11" - 9.5" concrete width at top (1.22 x 0.41 x 0.28 - 0.24 concrete width at top)	0.108 cu-yd 0.083 m³	0.020 cu-yd 0.016 m³	5.33 ft² 0.50 m²
		8″ (203mm)	48" x 16" x 13" - 11.5" concrete width at top (1.22 x 0.41 x 0.33 - 0.29 concrete width at top)	0.141 cu-yd 0.108 m³	0.026 cu-yd 0.020 m³	5.33 ft² 0.50 m²
		6″ (152mm)	48″ x 16″ & 5″ Brick Ledge space (1.22 x 0.41) & 0.13	0.138 cu-yd 0.105 m³	0.026 cu-yd 0.020 m³	5.33 ft² 0.50 m²
	Amvic Brickledge Block	8″ (203mm)	48" x 16" & 5" Brick Ledge space (1.22 x 0.41) & 0.13	0.171 cu-yd 0.130 m ³	0.032 cu-yd 0.024 m ³	5.33 ft ² 0.50 m ²
		8" to 6" transition	48" x 16" & 4.5" Brick Ledge space (1.22 x 0.41) & 0.11	0.157 cu-yd 0.120 m³	0.029 cu-yd 0.023 m³	5.33 ft² 0.50 m²
		2″ (51mm)	48″ x 2″ x 2.5″ (1.22 x 0.05 x 0.06)	N/A	N/A	N/A
H	Amvic Height	3″ (76mm)	48″ x 3″ x 2.5″ (1.22 x 0.076 x 0.06)	N/A	N/A	N/A
	Adjuster	4″ (102mm)	48″ x 4″ x 2.5″ (1.22 x 0.10 x 0.06)	N/A	N/A	N/A

Amvic T-Blocks	Block Type	Concrete Core Width	Form Dimension Inches LxHxW (Metres)	Concrete Volume Per Form	Concrete Volume Per sq.ft of Wall Area	Surface Area Per Form
	Short Leg T-Block	6″ (152mm)	[30″+9.5″]x16″x11″ ([0.76+0.24]x0.4x0.28)	0.081 cu-yard 0.062m ³	0.018 cu-yard 0.014m ³	4.39ft ² 0.41m ²
	Long Leg T-Block	6″ (152mm)	[30″+21.5′]x16″x11″ ([0.76+0.55]x0.4x0.28)	0.106 cu-yard 0.081m ³	0.018 cu-yard 0.014m ³	5.72ft ² 0.53m ²
	Short Leg T-Block	8″ (203mm)	[32″+9.5´]x16″x13″ ([0.81+0.24]x0.4x0.33)	0.114 cu-yard 0.087m ³	0.025 cu-yard 0.019m ³	4.61ft ² 0.43m ²
	Long Leg T-Block	8″ (203mm)	[32″+21.5′]x16″x13″ ([0.81+0.55]x0.4x0.33)	0.147 cu-yard 0.112m³	0.025 cu-yard 0.019m ³	5.94ft ² 0.55m ²

Table 2.1 – Amvic ICF Products

* All dimensions taken are based on the outer perimeter of form.



2.2 – Product & Accessory Packaging

Amvic ICFs and accessories are packaged in bundles to achieve maximum space utilization during shipping. Please refer to table 2.2 below for packaging details.

Item Description	Individual Block Weight	Blocks / Bundle	Bundle Weight	Bundle Size	Approximate # of Bundles on 53 ft trailer*
4" Straight	2.975 Kg (6.56 lbs)	18	55.11 Kg (121.5 lbs)	54 3/4" X 48 1/2 " X 49"	48
4" 90 Degree	1.634 Kg (3.6 lbs)	24	(90 lbs)	50" X 50" X 48 1/2"	48
4" 45 Degree	1.765 Kg (3.89 lbs)	24	(97 lbs)	50" X 50" X 48 1/2"	48
6" Straight	3.005 Kg (6.62 lbs)	15	(103 lbs)	55" X 48 1/2" X 49"	46
6" 90 Degree	1.706 Kg (3.76 lbs)	12	(48 lbs)	49 3/4" X 51 1/2" X 27"	88
6" 45 Degree	1.800 Kg (3.97 lbs)	12	(50.5 lbs)	49 3/4" X 51 1/2" X 27"	88
6" Taper Top	2.957 Kg (6.52 lbs)	15	(101.5 lbs)	55" X 48 1/2" X 49 "	46
6" to 6" Brickledge	3.700Kg (8.16 lbs)	9	(76.75 lbs)	48 1/2" X 48 1/2" X 49"	48
8" Straight	3.160 Kg (6.97 lbs)	12	(87 lbs)	53" X 48 1/2" X 49"	47
8" 90 Degree	1.943 Kg (4.28 lbs)	12	(54.5 lbs)	49 3/4" X 59 1/2" X 29 3/4"	76
8" 45 Degree	1.900 Kg (4.19 lbs)	12	(53.5 lbs)	49 3/4" X 59 1/2" X 29 3/4"	76
8" to 6" Brickledge	3.289 Kg (7.25 lbs)	9	(68.5 lbs)	49 1/2" X 50" X 48 1/2"	48
8" Taper Top	3.010 kg (6.64 lbs)	12	(83 lbs)	53" X 48 1/2" X 49"	47
8" to 8" Brickledge	3.700 Kg (8.16 lbs)	9	(76.75 lbs)	54 1/2" X 48 1/2" X 49"	48
10" Straight	4.000 kg (8.82 lbs)	6	(56 lbs)	50" X 45" X 48 1/2"	52
10" 90 Degree	4.400 Kg (9.7 lbs)	4	(43 lbs)	49" X 43" X 33 1/4"	78

Table 2.2 Amvic ICF Packaging

* Size of 53ft trailer = L X W X H = 636" X 99" X 109" * Trucks usually have a mix of block type bundles .

Table 2.3 lists the most common Amvic ICF accessories available. Contact your local Amvic Distributor to discuss stock availability for accessories and construction tools and equipment.



Item Description	Units / Specs	Units					
Accessories							
DuRock Prep-Coat B-2000	50 lb (22.7 kg) bag	ea					
Fiber mesh, 475 S.F./roll	10 oz	roll					
Ener Foam 12 cans per case	32 oz/can	ea					
Foam to Foam 12 per case	24oz/can	ea					
Cleaner for foam gun 12 per case	24oz/can	ea					
Foam Gun W-FGSSX	piece	ea					
Q-Zip Ties 8"	100 per pk	ea					
Q-Zip Ties 24"	50 per pk	ea					
Q-Zip Ties 36"	50 per pk	ea					
Tape 4" wide x 180 ft	roll	ea					
Tape 1" Fiber x 180 ft	roll	ea					
Simpson Strong Ties ICFLC	1	ea					
Simpson Strong Ties ICFLC-W	1	ea					
Simpson Strong Ties ICFLC-CW	1	ea					
Simpson Strong Tie Screws ICFL-W & CW	120 per box	ea					
Grappler 4' x 8"	90 per box	ea					
Water Proofing/Damp Pro	ofing Membrane						
System Platon	8´ x 65´ 6″ (2.44m)	roll					
System Platon	6´ 9″ x 65´ 6″ (2.07m)	roll					
System Platon	6´ 6″x 65´ 6″ (1.98 m)	roll					
System Platon	6´ x 65´ 6″ (1.83 m)	roll					
System Platon	5′ 5″ x 65′ 6″ (1.65m)	roll					
System Platon Screws	500 per pack	box					
System Platon Plugs	500 per pack	box					
System Platon flat washers	100 per pack	box					
System Platon Speed Clips	325 per pack	box					
System Platon L Molding	10 per bundle	box					
Soprema Peel and Stick Primer	coverage 10 rolls per	drum					
Soprema Peel and Stick Summer 40 mil	75´ x 36″	roll					
Soprema Peel and Stick Winter 40 mil	75´ x 36″	roll					
Bracing & Alignme	nt System						
Standard 10 Ft Plumwall Brace		piece					
Standard 12 FTPlumwall Brace		piece					
Econobrace w/ platform and diagonal Brace		piece					
Knee Wall Brace (Frostwall Brace)		piece					
Outer Corner Angle		piece					
Inner Corner Angle		piece					
Ground Screws		piece					
Wall Brackets		piece					
Wall Clips		piece					
Wall Pins		piece					
Ladder Section Highwall		piece					
Outer Brace Assemble (Highwall)		piece					
Platform (Highwall)		piece					
Hardware Kit		piece					
Complete Highwall System (ladder, platform, outer brace and hardware kit)		piece					

*Table 2.3 - ICF Accessories**

* Please call Amvic Head Office or Local Distributor for complete or updated list of accessories and other construction tools and equipment.





Part 3 – Tools, Material and Accessory Requirements

3.1 -Tools for Block Installation

- Hand saw, folding pruning saw or conventional rip saw
- Portable power saw
- Keyhole saw
- Table saw (optional)
- Tape measure
- Cordless driver drill and appropriate bits
- Hammer drill
- Reinforcing steel tie tools
- Hammer
- Framing square
- 2 ft Spirit Level
- 6 ft Spirit Level
- Laser level, water level, or transit
- Plumb bob
- Mason's line (Enough to circle entire structure)
- Chalk line
- Foam gun
- Reinforcing steel bender and cutter
- Scaffold planks
- Wall alignment & bracing system
- Steel Stakes to anchor alignment braces (n/a if bracing off a slab)



3.2- Tools for Concrete Pour

- Concrete Vibrator, 1 inch to 1¼ inch (25 to 32mm) head
 10 to14 ft (3 to 4.2m) flexible shaft
- Rubber gloves
- Hard hats
- Concrete finishing tools
- Flat shovels for spill cleanup

3.3 - Tools for Utility Installation

- Hot Knife (for electric box cutout)
- Electric chain saw (for cutting Romex wiring and plumbing channels)
- Foam gun & Foam

3.4 - Materials list

- Reinforcing steel as required and accessories, e.g. ties, stirrups.
- Screws to attach alignment bracing to ICF blocks (1⁵/₈ inch, 2¹/₂ inch, #10 coarse thread)
- Concrete Screws 1¹/₂ to 1³/₄ inch to attach foot of alignment braces to concrete slab (TAPCON brand or equivalent)
- Material for rough openings (i.e. 2x10, 2x6, etc.) lumber or plywood for fabricating wood bucks or vinyl bucks
- Tie wire in rolls and in pre-made reinforcing steel tie loops
- Anchor bolts, nuts, and washers or Simpson Strong-tie® ICFLC ledger connectors
- Sleeves for mechanical and/or electrical fixtures
- OSB or plywood for bridging cut joints, or removed webs, block outs for anchor bolts, etc.
- Foam 2 Foam® EPS controlled-expansion foam/adhesive
- Waterproofing / Damp Proofing system





Keep a spare concrete vibrator head and shaft on hand in case you need it.

Part 4 – Construction Overview

10 Step Construction Guide

Step 1 - Plan the outline of the block and the location of door and window openings on a conventional footing or a slab that is level, straight and square. Reinforcing steel dowels should extend upward from the footing into the cavity of the block or as per engineering and/or local code requirements.



Figure 4.1 – *Outlining walls*

Step 2 - Place the first corner blocks on each corner, then lay the straight blocks toward the center of each wall segment. On the first course, use zip-ties or wire ties on the webs to connect the blocks and pull them snugly together. Following this, install horizontal steel reinforcement by placing it in the clips at the top of the internal webs within the block cavity. The clips hold the reinforcing steel securely and eliminate the need for wire tying. (Repeat this process for each course of block).





Figure 4.2 – Placing corner blocks first



Figure 4.3 – Installing horizontal reinforcing steel and lap splicing

Step 3 - Install the second course of ICF by reversing the corner blocks, so that the second course of block is offset from the first, in a running bond pattern. At this point check for level across all of the blocks. If the courses are not level, use shims or trim the block as required.



Figure 4.4 – Installing second course of ICF



Step 4 - Install window & door frames ("bucks") at each location where an opening is required; cut and fit the Amvic blocks around them. Bucks are used to hold back the concrete and stay in place permanently providing a nailing surface for the installation of windows and doors. Pressure-treated lumber or vinyl bucks may be used.



Figure 4.5 – Installing window and door bucks

Step 5 - Install additional courses of block by continuing to overlap the courses so that all joints are locked both above and below by overlapping blocks.



Figure 4.6 – Continuing installing block courses



Step 6 - Install alignment bracing around the entire wall of the structure to ensure that the walls are straight and plumb and to enable alignment adjustment before and during the pour. The bracing also serves the dual purpose of providing a secure and safe framework to support scaffolding planks once five courses have been stacked.



Figure 4.7 – Installing alignment and bracing system around the perimeter of the wall

Step 7 - Stack the block to the full wall height for single storey construction, or to just above floor height for multi storey construction. Cut the vertical reinforcing steel to length and begin installing it from the opening at the top of the wall, through the spaces between the horizontal reinforcing steel.



Figure 4.8 – Install vertical reinforcing steel after top course of blocks



Step 8 - Pour the concrete into the stacked walls using a boom pump. Do this in lifts approximately 3-4 ft (0.9-1.2m) at a time, circling the structure until the top of the wall is reached. Next, use a mechanical pencil vibrator (stinger) to vibrate the concrete and remove all air pockets within the wall. Up to one story can be poured each day using this method.



Figure 4.9 – Pouring concrete in lifts of 3-4 ft (0.9-1.2m)

Step 9 - Screed off the concrete until it is even with the block top and then "wet set" anchor bolts into the concrete top. These bolts will be used later to install the top plate (mud sill) for the installation of rafters or trusses.





Figure 4.10 – *Wet set anchor bolts in top course of upper floor*

Step 10 - Remove bracing after the concrete has cured, then proceed with further stages of construction.



Part 5 – Window & Door Openings

5.1 Window & Door Bucks

Window and door bucks are an integral part of the ICF construction process. This section explains the main principles and most common methods of buck construction and installation.

The two most common materials used for bucks are wood and vinyl. Some contractors build their own bucks using 2x lumber, while others prefer using a vinyl buck.



Please Note

Experienced ICF installers use a variety of methods for forming and installing bucks. This section only provides a guideline for new ICF installers.



Figure 5.1 – Constructing window/door bucks



Tip

In many cases the specified window rough opening is the size of the buck, and the window itself is smaller. In the case of a few window manufacturers, their specified rough opening is the size of the window frame itself and a larger rough opening is required.

VERIFY THIS BEFORE BEGINNING!



5.2 - Wood Bucks

5.2.1 – Choosing the Lumber

Historically, full dimension pressure treated 2x lumber was used to construct bucks. More recently builders who still use wood bucks are using untreated wood with a waterproof barrier between the buck and the concrete surface. Untreated wood is available in higher quality, is easier to work with and the waterproof barrier keeps the buck straighter. In both circumstances, wood bucks will distort and twist to some degree which can cause window, trim and sheetrock installation problems.



Figure 5.2 – Typical buck made of pressure treated lumber



Figure 5.3 – Untreated lumber with waterproof barrier

5.2.2 - Constructing Wood Bucks

When constructing a wood buck for Amvic 6 inch (152mm) block, trim 2x12 stock lumber for the top and sides of the buck since the total thickness of the block is 11 inches. This may be done using a table saw. The bottom of the buck should be constructed using two pressure treated 2x4s. This leaves an opening at the bottom of the window through which concrete will be poured and consolidated using a vibrator. (Fig 5.4 & 5.5 below).





Figure 5.4 – Typical window buck bottom construction



Figure 5.5 – Opening at bottom of window buck for pouring concrete

5.2.3 - Connecting Wood Bucks to Concrete

The simplest way to connect wood bucks to the concrete wall is to drive galvanized 16d nails through the bucks, so the nails will be embedded into the concrete when it is poured. Alternatively, galvanized deck screws can be used.

Install the nails or screws every 12 inches (300 mm) at opposing angles (i.e. 20-30 degrees from perpendicular), to prevent movement of the buck once the concrete has set.



Figure 5.6 – Installing nails into the bucks for attachment to concrete



5.3 - Vinyl Bucks

Increasingly builders are using bucks made from extruded vinyl. These bucks come in sections and are commonly cut on site with either a portable power saw, or more conveniently a compound miter saw. Connectors are used at the corners to tie the cut sides together.



Figure 5.7 – Typical vinyl window buck

5.3.1 - Advantages

- Labour is 50% less for vinyl than wood bucks
- Vinyl does not rot or decay
- Vinyl bucks do not allow moisture to seep into the structure should a leak develop around a window
- Vinyl is substantially lighter than wood
- Curves and rounds are much easier to construct and install (please refer to Figure 5.8). Vinyl bucks can be bent into the desired shape on site, or can be ordered preformed (recommended).





Figure 5.8 – Round openings can be formed easily using vinyl bucks

- Flanges on the vinyl buck capture the edges of the block at the openings and eliminate the need for gluing and additional cleats and bracing.
- Material waste is minimal. With couplers, the waste pieces can be rejoined and made fully usable.

5.3.2 - Disadvantages

- Vinyl bucks are not as stiff as wood bucks and require more bracing to prevent flexing and to maintain square and plumb position during the concrete pour.
- Vinyl bucks are typically more expensive than lumber.

5.3.3 – Steps for Vinyl Buck Construction

Vinyl bucks come in standard 16 ft (4.8m) lengths with full accessory packages. They can be ordered pre-built to required size, which is recommended since it reduces on site labor. Packages contain corner connectors, straight connectors and metal squaring pans. Bracing pans must be used with vinyl bucks.





Figure 5.9 – Vinyl bucks come with accessories including bracing pans and connectors

1. Cut vinyl into required lengths for buck construction.



5.10 – Cutting vinyl bucks to required size



V-Buck is one of the most common types of vinyl bucks currently used with Amvic ICF. Please visit their website address below for more information about their product and accessories.

www.vbuck.com



2. Cut a hole in the bottom buck (sill) to allow for concrete pouring and vibration.



Figure 5.11 – Cutting a hole in bottom buck



Figure 5.12 – Bottom buck is ready for pouring concrete

3. Insert corner connectors on both ends of the sill



Figure 5.13 – Inserting Connectors. Image courtesy of V-Buck



- 4. Attach the two side bucks to the sill.
- 5. Insert the final corner connectors to the two side bucks and install the window or door header piece in place.



Figure 5.14 – Attaching side pieces to the sill. (Hole for pouring concrete not shown.) Image courtesy of V-Buck



Figure 5.15 – Installing the header. (Hole for pouring concrete not shown.) Image courtesy of V-Buck


- 6. Insert the corner metal bracings and screw to the sides of the buck.
- 7. The completed buck is now ready to be installed in the proper location during construction.



Figure 5.16 – Bracing the bucks with metal corner pans. Image courtesy of V-Buck



Figure 5.17 – Placing the complete buck in appropriate place. Image courtesy of V-Buck





6.1 – Overview

Building any structure using Amvic ICFs requires the installer to have a good knowledge of the fundamentals of steel reinforcement. This part of the manual will discuss the basics of reinforcing steel requirements for Amvic ICF walls.

6.2 – Plan Requirements

The designer (Architect/Engineer) of any project should clearly indicate the following information on his plans:

- 1. Separate cross sections of all walls using Amvic ICF. Each cross section should clearly show the size of Amvic ICF block used (i.e. 4, 6, 8, or 10 inch) for the building inspector and installer.
- 2. Each cross section should show the wall heights involved for every storey.
- 3. Vertical and horizontal reinforcing steel bar sizes, spacing and grade of steel should be clearly marked for every storey in each wall cross section or in a separate note on other sheets.
- 4. The placement of reinforcing steel, especially the vertical ones should be clearly marked (i.e. off center or towards interior/exterior or centered in the wall).
- 5. The designer should specify the lap splice type and lengths for every section of the wall where splicing is anticipated. (Please refer to Reinforcing Steel Splicing in **section 6.6** of this chapter.)

6.3 – The Purpose of Reinforcing Bars

Reinforced concrete structures are composed of two different materials;

- a. Concrete
- b. Steel

Plain concrete is a strong material in compression. Compressing a plain concrete cube or cylinder requires a relatively large amount of compressive force before reaching compression failure. However plain concrete is relatively weak in tension (typically can only carry one tenth $(\frac{1}{10})$ of its compression strength in tension).



Reinforcing steel has excellent strength in both compression and tension loads but is more expensive than concrete.

Therefore reinforced concrete structures are typically designed by engineers such that concrete is mainly utilized for most of the compressive forces and reinforcing steel is utilized for all of the tensile forces and in some cases some of the compressive forces.

The design of reinforced concrete structures have been streamlined particularly over the last century for safety as well as economic feasibility. Reinforced concrete structures have had a tremendous track record in some of the most complicated structures including dams, bridges and high rise buildings across the globe.

6.4 – Horizontal Reinforcement

Amvic polypropylene webs are specifically designed to accommodate and secure the horizontal reinforcing steel in place without the need to tie them.

Typically the first course of horizontal reinforcement is placed in the notches closer to the EPS panel.

The second course of horizontal reinforcement is staggered so that it is placed in the notch towards the center of the concrete wall.

The third course is placed in the same position as the first course. The fourth course is placed in the same position as the second.

This staggered pattern of horizontal reinforcement is necessary to allow for the vertical reinforcement to be placed from the top and weave in between the horizontal steel bars.

Figures 6.1 and 6.2 below show typical vertical and horizontal reinforcing patterns for below grade and above grade applications using 8" Amvic ICF block respectively.

6.5 – Vertical Reinforcement

Vertical reinforcement is placed after the Amvic ICF wall has been stacked and completely erected. In case of a multi-storey wall then the vertical reinforcement is placed after the erection of each individual storey. Vertical reinforcement bars are slid into place from the top and weaved into the horizontal reinforcement and secured into the proper place according to the project plans and specs.





Refer to figures 6.1 and 6.2 below.

6.6 - Reinforcement for Wall Openings

Most walls will have window or door openings or both. Creating a wall opening in a reinforced concrete wall creates extra stress around that opening especially at the corners. Window and door headers also known as lintels can be subjected to significant bending moment and shear forces depending on several factors.

Please refer to Appendix A for more details on how to handle reinforcement in wall openings.

6.7 – Reinforcement Splicing

Steel reinforcement typically comes in 20 foot (6 meter) lengths. In such cases where steel reinforcement is required to exceed this length, then a splice is required. The main purpose of the splice is to transform the stresses whether tensile or compression from one steel reinforcing bar or a group of bundled bars to another in a manner to satisfy the governing local building/engineering codes and/or requirements of engineering plans and specs.



6.7.1 – Types of Lap Splice

For the purpose and scope of this manual we will only discuss one type of splicing known as **lap splicing**.

Lap splicing is typically overlapping reinforcing steel over a certain length. The length of the splice should be calculated according to the local building codes or by a local engineer and specified on the project plans.

There are two main types of lap splices:

1. **Contact Lap Splice** – The lapped reinforcing bars MUST be in contact with each other and secured together.



Figure 6.3 – Contact lap splice

2. Non Contact Lap Splice – The reinforcing bars are allowed to be spaced at a distance of one fifth (¹/₅) of the lapped length to a maximum of 150 mm or 6 inches.



Figure 6.4 – Non-contact lap splice



6.7.2 – Minimum Requirement for Lap Splice Length

Both types of lap splices have a minimum splice length requirement as follows:



6.8 – Lapped Splices for Multiple Concrete Pours

When a project has more than one storey of Amvic ICF walls, it is necessary for the installer to understand how to perform vertical reinforcement lap splices between the different pours.

There are two options, both of which are satisfactory from an engineering/structural standpoint.

Option 1

Extend the vertical reinforcement steel bars beyond the top level of the lower storey. The length of the extension should be equal to the required splice length specified by the design engineer or a minimum length of 40d (where d = diameter of smaller steel bar being spliced). Please refer to figure 6.5 below for typical details.





Figure 6.5 – Vertical lap splice

Option 2

Cut the vertical reinforcement steel bars for the lower storey so that they are flush with the top of that wall. Shortly after pouring the concrete, wet set additional vertical reinforcing bars also known as dowels into the concrete. These should extend into the freshly poured wall a length equal to the splice length specified by the design engineer or a minimum length of 40d (where d = diameter of smaller steel bar being spliced). The wet-set vertical splice reinforcing steel bars should ALSO protrude into the upper wall by the same splice length specified by the design engineer or 40d as a minimum. Please refer to figure 6.6 below for details.





Figure 6.6 – Vertical lap splice using a dowel

6.9 – Designing Reinforcing Steel for Walls

Determining the reinforcing steel schedule whether vertical or horizontal is a structural engineering task which depends on many factors. This is beyond the scope of this technical manual, however, some tools are available for the residential construction market to assist in reinforcing steel design. The tools are explained below.



6.9.1 – Canada

CCMC report no.13043-R contains reinforcing steel tables for below grade and up to 2 storeys of above grade applications in residential projects. The report also contains some lintel tables for wall openings both in metric and imperial units.

There are applicability limits mentioned in the report which must be adhered to.



Code Requirements

- A Design of reinforced concrete shall be in accordance with CSA A23.3.
- B Reinforcing steel placement shall conform to CSA A23.1, CSA A23.4 and/or the local building code having jurisdiction.
- C Reinforcing steel bars shall conform to clause 7 of CSA A23.1 AND CSA G30.18.
- D Minimum Steel Yield Strength shall not be less than 300 MPA (40 ksi).

If the particular project at hand falls outside of these limits then a local licensed/registered engineer should be retained.

6.9.2 – United States

NAHB (National Association of Home Builders) in association with PCA (Portland Cement Association) have prepared the **"Prescriptive Method for Insulating Concrete Forms in Residential Construction"** specifically for the ICF industry [REF. 1].

This document contains reinforcing steel schedules for below grade and up to 2 storeys above grade applications. It also contains several lintel tables for wall openings in different applications. As expected, there are limitations which must be adhered to.



Code Requirements

- A Design of reinforced concrete and placement of reinforcing steel bars shall be in accordance to ACI 318 or ACI 332 and/or the local building code having jurisdiction.
- B Reinforcing steel bars shall conform to one of the following specifications;
 - 1 ASTM A615 Specifications for Deformed and Plain Billet-Steel Bars
- B 2 ASTM A706 Specifications for Low-Alloy Steel Deformed and Plain Bars
- B 3 ASTM A996 Specifications for Rail-Steel and Axle Steel Deformed Bars
- C Minimum yield strength of reinforcing steel shall be Grade 40 (300 MPa) except for seismic design categories D1 & D2 the minimum yield strength of reinforcing steel shall be Grade 60 (400 MPa).



For applications that fall outside the scope of the **"Prescriptive Method"** a local licensed/registered engineer should be retained.

PCA (Portland Cement Association) has prepared another tool for engineers to assist in the design of ICF walls – "Structural Design of Insulating Concrete Form Walls in Residential Construction" [REF. 2]. This publication explains in more detail the engineering principles involved in design load bearing and non-load bearing ICF walls even for walls outside the scope of "The Prescriptive Method".

6.10 – Steel Reinforcing Bars and Jobsite Safety

Unguarded protruding steel reinforcing bars are hazardous and can result in injury or death.

The following measures greatly reduce the hazards of exposed reinforcing steel:

- Guard all protruding ends of reinforcing steel bars with caps or wooden troughs, or
- Bend reinforcing steel so exposed ends are no longer upright.
- When employees are working at any height above exposed rebar, fall protection/ prevention is the first line of defense against impalement.



Figure 6.7 – Plastic mushroom caps on protruding steel bars





Code Compliance

According to OSHA (Occupational Safey & Health Administration – USA) article 1926.701 (b), the following clause shall apply to the jobsite:

"All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement."

A similar compliance clause present in OSHA (Occupational Health and Safety Act – Canada).



Part 7 – Preparing Footings & Slab on Grade (SOG)

7.0 – Introduction

An Amvic ICF wall can be started from either a footing or a slab depending on the design and engineering/architectural requirements. There are benefits and drawbacks to both methods, with no clear advantage one way or the other.

First Course of Block Set on Slab

The benefit to starting an Amvic wall on a slab is that there is a hard, level surface to work on and to anchor bracing on. A sturdy working surface can increase job site efficiency.

First Course of Block Set on a Footing

The primary advantage to starting from a footing is that the ICF provides slab edge insulation. The edge of a slab, where the floor is located is where the greatest amount of heat loss occurs in the winter. By insulating this area, heat loss is minimized and homeowners experience cost savings. This method is also preferable when a radiant floor heating system will be used, or if the final floor finish will be stained and sealed concrete. (Fig 7.1 Below)



Figure 7.1 – Typical wall section on footing

Footings and Walls for a Raised Floor

If the first floor will be a raised floor, then the wall must be started off of a footing. In some cases, builders will elect to pour 2-3 courses of block initially, and then install their floor system. Once the floor has been installed, continue stacking block.

7.1 - Dowel Placement in Footings/SOG (Slab On Grade)

Loads from the Amvic ICF walls need to be transferred to the footing/SOG. For that purpose reinforcing steel dowels, a keyway or a combination of both need to be present in the foundations. Check with your local design engineer or the local building code requirements for the method that is most suitable for the application at hand.

When pouring footings or slab on grade, place reinforcing dowels as per engineer and/or local building code requirements. On 90 degree corners, start the first dowel $8 \frac{1}{2}$ inches in from the outside edge of the Amvic form, then space subsequent dowels in increments of 6 inches to avoid hitting webs (Figure 7.2 below).



Figure 7.2 – Plan of typical dowels placement





On most walls, you will end up going off layout, the block will have to be cut and you will have one location in the wall where the webs are not 6 inches apart because of the cut joint. In this case, start dowel placement in the corners and work towards the cut joint. (It is not a major issue if you have the rebar coming up directly on a web location. If this occurs, you can bend the bar in a slight S-curve and that will clear the web.)

7.2 – Level Foundations

Tip

After pouring the footings and or slab on grade, make sure the top finished surface is level to within ¹/₄ inch (5mm). (Commonly this is the local building code requirement). A proper level footing will make installing the first two courses of block significantly easier.

Level can be checked using a laser, transit or water level. If you find you are within 1/4 inch (5mm) all the way around, proceed with stacking. If not, mark the variance of each corner on the footing or slab and adjust the ICF in later stages of installation.



Figure 7.3 – Level Top Surface of your Footing and SOG

7.3 – Outlining Your Project

There are several steps in outlining your project which are necessary and should be marked on your foundations before you begin installing Amvic ICF. This increases jobsite efficiency and reduces complications.



7.3.1- Outlining Wall Layout

Using Chalk Line

Before you begin outlining the wall layout, check your building/project plans carefully to determine the proper foundation wall layout and dimensions. Use a chalk line or string and mark the wall layout on your footings/SOG. You can either mark the outside or the inside face of your walls. Most installers tend to mark the outside face simply because the building/project plans will readily indicate this information. Make sure that all 90 degree corners are properly squared. This can be done by measuring diagonals or 3-4-5 right angle triangle. A surveyor may be hired to establish the correct angles on the jobsite including variable angles and special radius walls.



Figure 7.4 – Snap a chalk line to mark your wall Layout



Using Metal Angle/ C-Channel Section

An alternative to using a chalk line is to use a light gauge metal angle or c-channel section to mark your wall layout. The angle should be fastened to your footings/SOG with proper concrete screws or foam adhesive. When installing the first course, the angle/C-channel will serve as a guide against which you can place the blocks as per figures 7.5, 7.6 below.

However, should you need to make minor modifications to the wall placement after a few courses of block are placed, it becomes difficult to remove the metal angle after it has been screwed or adhered to the concrete footings/SOG.



Figure 7.5 – Using a C-Channel to mark your wall layout



Figure 7.6 – C-Channel section acting as a guide for the first course placement

7.3.2 - Outlining Windows / Doors

From your plans measure and mark the center of each door and window location on the footing/slab. It is also useful to mark the rough size of the opening.

7.3.3 - Outline Rough Size Openings

From your plans, carefully calculate the height intended for the bottom of each rough opening. From this rough opening height, subtract the amount that is the thickness of the buck $(1^{1}/_{2} \text{ inches if using } 2x \text{ stock lumber or V-Buck})$. This line is the "cut line" for the block. Write this on the slab/SOG beside the rough opening size of the window. This is the height at which you will cut the block and install the buck.



Tip



If Amvic ICF installation will take more than one day to complete, protect the chalk line to avoid it being erased or washed away.



Tip Consider snapping the chalk line at a ¹/₂ inch offset from the actual wall outline. Later on if you need to adjust the wall placement for any reason, then you can still see your marked outline.



8.1 - Overview

This part of the manual will explain the detailed steps in constructing a typical Amvic ICF project. By the end of this chapter, your Amvic ICF wall(s) should be set up and ready for the concrete pour.

8.2 – Mobilization: Material & Tools Positioning

Once wall, window and door layouts are complete, materials and tools should be organized to maximize efficiency during construction. A typical Amvic ICF project is much easier to construct from inside of the footprint rather than the outside.

The following are recommended practices:

1. Before any installation begins it is preferable to move as much block as possible within the perimeter of the wall layout. Stack it if necessary. This will minimize workers movement during the construction process.



Figure 8.1 – Placing Amvic ICF within the perimeter of the wall layout

2. Place reinforcing steel, tools and equipment within the perimeter of the wall layout including bracing, bender/cutter, table saws, scaffolds and planks as well as any other equipment you may need.



3. For each storey, build door and window bucks before starting to lay block and position them within the wall layout perimeter close to where they will be installed. (Please refer to part 5.)



Tips

Prior to construction, order pre-cut and bent rebar from your steel supplier. For 90 degree corners, have them cut and bent to the proper lap splice lengths so they will be ready for placement when they arrive to the site. Similarly Z-shaped reinforcing steel (Figure 8.2) required for wall bump-outs can be ordered from your steel supplier.



Figure 8.2 – Pre-cut & bent reinforcing steel will increase efficiency



Try to place all materials and tools at least six feet away from the inside wall to provide space for bracing and alignment equipment.



for a prolonged time on the jobsite, protect them from dust, sunlight and extreme weather by storing them in a contained environment.

Amvic ICF comes in bundles of different quantities depending on the type and size of block ordered. The most convenient way to move a small number of bundles is to slide 2x lumber through the forms then carry them to the desired location (Figure 8.3 below). A greater number of bundles may require using a forklift (Figure 8.4 below). An average person can easily carry a few separate blocks during construction.





Figure 8.3 – Moving ICF bundles by hand



Figure 8.4 – Using forklift to move bundles



8.3 – Course Planning: Determining wall heights & no. of courses per Storey

Prior to laying block, determine the exact wall height required for the project.

Amvic ICF is 16 inches (406.4 mm) high except for the 10 inch block which is 24 inches high (609.6 mm). If your storey height is not divisible by 16 inches or 24 inches, you have two options:

1. Rip-cut the first or last course of block horizontally. Cutting the first course is recommended since the cut edge will be glued to the footing/SOG and will not affect the interlocking of subsequent courses. If you decide to use this method, make sure you preserve the polypropylene webs which connect the two EPS panels. (Figure 8.5 below.)



A circular saw is recommended for rip cuts since cutting the webs by hand can be tedious and time consuming. (Figure 8.5 below.)



Figure 8.5 – Using a circular saw to horizontally rip cut ICF



When using a circular saw for rip cuts, use one with an $8^{1/4}$ blade.



2. Use an Amvic ICF height adjuster. These are available in 2, 3 & 4 inch heights (50.8, 76.2 & 101.6 mm) and can be placed below the first course or above the last course. Placing the height adjuster above the top course is recommended. (Figure 8.6 below)



Figure 8.6 – Amvic height adjuster

8.3.1 – Single Storey vs. Multi-Storey Construction

For single storey structures the walls are poured in one day from the footing/SOG to the top plate. For multi-storey structures forms are typically stacked and concrete poured one storey at a time. Once a storey is complete, the floor joists and floor will be installed before the next storey is stacked and poured.



8.4 – Placing First Course of Block

Once the pre-planning stages are complete, begin placing the first course of block by following the steps outlined below.

1. Place door bucks in their proper location on the footing/SOG. Install a temporary kicker, stacked outside to hold each safely in place.



Figure 8.7 – Placing Door Bucks



Note

Some installers will not place door bucks until at least two courses of block have been stacked. This provides the benefit of establishing an interlocking pattern between the courses before buck installation. When using this method, bucks are installed by cutting through the blocks to the rough opening sizes then securing the bucks in place. This method is acceptable but may increase block wastage.



- 2. If you are not rip-cutting the first course horizontally. (Refer to section 8.2 above). The nubs on bottom interlock may be shaved off to provide a flat contact surface with the footing. Some installers may opt to leave them, which is also acceptable.
- 3. Start stacking by first placing the corner forms. It does not matter how the corner blocks are laid as long as the direction is reversed on the subsequent course.



Test different placements of the corner blocks to minimize block wastage.



Figure 8.8 – Placing corners first

4. Install straight forms starting from the corners and working toward the center of the wall or door buck. If a dowel from the footing/SOG is in contact with a web, bend it to make an offset curve around the web. This will help to prevent pressure on the blocks which may result in misaligned walls.





Figure 8.9 – Placing straight blocks

5. Cut the final block in each wall section to size. Ideally the cut will be made at a 2 inch increment line (center between two interlocks). This will allow for proper alignment of the interlocking system. Where possible, slightly adjust wall dimensions to accommodate this. If it is not possible to adjust wall dimensions, an offset/stack joint will be created. (Refer to



Offset/stack joints require additional bracing to withstand hydrostatic pressure during the concrete pour. Please refer to section 8.10 for more information.

Section 8.10.) Keep this offset/stack joint at the same location when stacking the subsequent courses of block.





Figure 8.10 – Cutting the final block for a wall section



Figure 8.11 – Fitting the cut block in place



Optional:

Connect blocks in the first course together using zip ties (plastic ties or wire ties). One zip tie per end joint is generally sufficient. Place zip or wire ties towards either edge (next to the EPS inside face). Tightening at the center will flex the webs and may lead to foam fracturing at that location creating a source of failure during the concrete pour.



Figure 8.12 – Using zip ties to tie the first course blocks together

6. Install the horizontal reinforcing steel as per engineering or local building code requirements. (Refer to part 6 of manual.)



Figure 8.13 – Installing horizontal rebar





8.5 – Placing the Second Course of Block

Figure 8.14 – Second course placement

1. Start by stacking the corner blocks first. Every corner block has a short leg and a long leg. Make sure that you reverse the corners on the second course by flipping them upside down so that the long leg interlocks with the short leg of the first course. This will create a 12 inch (304 mm) running bond pattern between the two courses.



Figure 8.15 – Reversing 45 degree corner blocks for bay window

2. Stack the straight forms, working towards the center of the wall.



3. Place the cut block on this course at the same location as the first course. This will ensure your offset/stack joint remains roughly in the same place.



Figure 8.16 – Placing the offset joint in approximately same place as first course

- 4. Press down firmly on the blocks to ensure a secure connection with the course below.
- 5. Install horizontal reinforcing steel as per engineering or local building code requirements.



It is very important to keep the offset/stack joint at roughly the same location for each wall section as you stack the courses. This will ensure that there is a straight "stud" for interior and exterior attachments.



8.6 – Checking for Level

Once the second course has been laid, place a square of plywood or OSB over each corner block and check for level. If you are more than $\frac{1}{4}$ inch out then you will need to either shim low spots or trim high spots. Once the walls have been leveled to within $\frac{1}{4}$ inch you are ready to secure the first course of block to the footings/SOG.



Figure 8.17 – Checking for level after second course placement

Use foam cuttings as shims to level the wall at the vertical joints.



Figure 8.18 – Shimming the first course with foam cuttings



If you need to trim the first course of block, slide a hand saw underneath the blocks and shave off the desired amount.



Figure 8.19 – Trimming the first course of block with a hand saw

Once the walls have been leveled to the desired tolerance, you are ready to secure the first course of block to the footings/SOG.

8.7 - Securing First Course to Foundation/SOG

Ensure that all walls are on their layout lines then use low expansion foam adhesive to glue the base of the first course to the footing/SOG. Insert the nose of the foam gun into one of the notches every 6–12 inches (150-300 mm) along the footing and squirt a small amount of foam adhesive under the block along the entire wall. Allow the adhesive to set for up for 30-60 minutes.



When shimming/brimming keep in mind that this may be needed on both sides of the form.



Tip

Securing the first course of block to the foundation is an ideal task to do just before a break.





Figure 8.20 – Using foam adhesive to secure the first course of block to the foundation/SOG

When foaming under a large, low spot, ensure that the entire area is done.



Figure 8.21 – Foaming under a large, low spot area



8.8 – Placing 3rd & Subsequent Courses of Block

The installation of subsequent courses of block is the same as for the second course of block.

Remember:

- 1. Start in the corners, alternating the direction of the corner forms.
- 2. After setting corners, work towards the centre of the wall



offset/stack joints occur.

- Keep offset/stack joints (where you lose layout) in the same place as the wall goes up. The remainder of all wall sections should maintain their web alignment (indicated by the deep grooves on the outside face of the EPS panels).
- 4. Place horizontal steel reinforcement as required by engineering or local building code requirements.

8.8.1 - Cutting Block around Door Bucks

If you have chosen to delay door buck installation until after you have placed the first two courses of block, it must be done at this point. Cut the blocks and secure the door bucks in place, remember to leave ¹/₄ inch gap between the forms and the buck to allow for adjustment before pouring the concrete. (Refer to section 8.10.)



Figure 8.22 – Stacking courses around door bucks



8.8.1.1 - Elevated Doorways

For doors on second storeys or doors with elevated floors, the height of the door sill must be carefully calculated before the floor is in place. It is a good idea to install a pressure treated 2x4 or 2x6 sill into the block that will be poured in place to provide an attachment point for the door threshold.



Figure 8.23 – Installing door bucks on the second floor



8.8.2- Cutting Forms around Window Bucks

The window and/or door bucks should already be assembled and ready for installation. (Refer to part 5 of manual.) The bottoms of window bucks are usually placed in the 3rd or 4th course of blocks and must be perfectly level. If they are not, then trim or shim as required. When cutting the block, leave a ¹/₄ inch gap between the block and the buck to allow for adjustment after all the courses have been stacked and before concrete is poured. (Refer to section 8.10.)



Figure 8.24 – Building courses around window bucks

8.8.3 – Reinforcing Steel around Wall Openings

Install reinforcing steel around the window/doors as you stack the blocks. Wall openings are required to have minimum shrinkage and crack control steel bars on both sides and sill (area below window opening). For wall openings greater than 2 feet (610 mm) in length, diagonal reinforcing steel may also be required at the corners. The headers (area above door/window opening), commonly known as lintels require specially engineered and detailed reinforcing steel bars. (Please refer to **Appendix A** for more details on steel requirements for wall openings.)




Figure 8.25 – Installing reinforcing steel bars for wall opening header or lintel

8.8.4 - Placing the Top Course of Block

The top course of block in each pour needs special attention since it is not locked at the top. During the concrete pour the upper sides of the top course tends to flex outward, and if not secured properly may go out of plumb. This will also cause the interlock to be misaligned if there is another ICF wall storey above.

The following steps are recommended for each top course of a storey;

- 1. Tie each block to the next using zip or wire ties on the webs ensuring they are pulled snugly together.
- 2. Use a horizontal wailer around the top at the corners of the structure. A 1x4 or 1x6 lumber is ideal. Install a drywall screw into every other web on each block to minimize stretching.
- 3. If there are long narrow lintels, install a wailer on both sides of the block wall and to each other. This should prevent the course from flexing outwards.
- 4. If another course of block will be installed above this temporary top course, protect the tops of the block. An ideal protective device is 2¹/₂ inch metal stud starter track. It is exactly the right dimension to slip over the EPS foam panel on each side. Alternatively, 4 inch wide plastic tape can be used.





Figure 8.26 – Protecting the Interlock on a top course

8.8.5 - Installing Vertical Rebar

The vertical reinforcing steel bars are installed after the top course of block for each storey has been placed.

At the uppermost wall storey, cut the reinforcing steel short to ensure there is 2 inches (50 mm) of concrete cover.



Review site safety plans and OSHA compliance regulations for protruding steel bars on the jobsite to protect workers from this hazard.

The steel bars are inserted from the top of the wall and weaved in between the horizontal steel bars that are already installed in place.

If there will be another ICF wall storey above, then refer to **Part 6 section 6.6** of this manual for splicing details and placement.





Figure 8.27 – Installing vertical reinforcing steel



8.9 – Installing Wall Alignment & Bracing

Alignment and bracing systems are required during construction with Amvic ICF and perform the three main functions listed below:

- 1. Ensure blocks are straight, plumb and properly aligned along each wall length.
- 2. Support stacked walls against wind and other lateral loads until the concrete is poured and gains enough strength.
- 3. Act as a scaffold for construction workers to stack the block courses.



Code Requirements

- In the United States scaffolds must meet the safety requirements of OSHA (Occupational Safety and Health Administration)
- In Canada scaffolds must meet the fall protection and scaffolding regulations of OHSA (Occupational Health and Safety Act)



Figure 8.28 – Plumwall bracing & alignment system

8.9.1- General Application

The following rules of thumb generally apply to bracing and alignment systems used with Amvic ICF regardless of which type or proprietary brand being used:

- Before using a new bracing system, check with your local Amvic distributor to ensure that it is appropriate for your use.
- Bracing is typically installed after the 3rd or 4th course of block is laid.



- In most cases, bracing is installed only on the inside of the wall structure, since this is where all the labor work occurs.
- Bracing will push very well, but is very limited in pulling the wall. While generally you brace only one side, if you have a wall section that you cannot plumb any other way, you may need to install braces on both sides to properly align the wall.



Figure 8.29 – Bracing the inside of the wall

Most bracing and alignment systems are specifically designed to allow for placing scaffolding planks and installing handrails. The planks and handrails are usually provided or acquired separately.



Figure 8.30 –Platform and scaffold planks



Bracing is usually attached either with a "hat bracket" that wraps around the strongback or a screw through a slot in the brace. Amvic recommends using wrapping hat brackets as they screw into two webs. A single center slot screw system is more likely to get damaged and/or get pulled out. If a single slot screw bracing system is used, install the screw near the *top of the slot*. Over tightening the screw may result in the block not settling or compressing which can misalign a wall, however, this is unlikely with Amvic ICF which compresses very little.

If you have glued down the first course of block and it is firmly attached to the footing/slab start installing the brackets on the second course. Continue attaching the brackets on every other course e.g. 2nd, 4th, 6th etc.



Figure 8.31 – A hat bracket wrapped around a vertical strong-back and screwed to webs on both sides



8.9.2 – Spacing for the Alignment & Bracing System

Depending on the system used and the governing local codes, there are minimum spacing requirements for the bracing which support scaffolding. Following the recommendations below will ensure you are well within the limits of these requirements.

Recommended Practices:

• Install two braces within 2 feet (610 mm) of a corner, one on each side.



Figure 8.32 – Bracing corners on the inside

• Install a brace at the edge of every door and window opening.



Figure 8.33 – Bracing both sides of wall openings





• Install braces along all the wall segments at a maximum of 6 feet (1.8 meters) apart.

Figure 8.34 – Bracing every 6 feet

- On walls that end without an adjoining corner (stub walls), install braces on all three sides.
- On T-walls, install at least two kicker braces on the outside of the T (the top). This is because walls tend to bulge at T-joints due to the pressure from the concrete in the leg of the T.

8.10 – Preparing Bucks for the Concrete Pour

At this stage you need to re-check the window and door bucks for the final adjustments in preparation of the concrete pour. The following steps are recommended:

- 1. Ensure that bucks are square and plumb. At each door or window buck, check again for square and plumb. Adjust as required.
- 2. **Glue & fill the buck-block joint.** Once bucks are square and flush, fill the gaps between them and the forms with adhesive foam. Allow this to set for at least 30 minutes.





Figure 8.35 – Filling gaps between bucks and forms with foam adhesive

3. **Cleat the corners.** At each buck, at all the four corners on each side, install a cleat that screws to the buck. Overlap the foam to hold the buck flush with the form on both the inside and outside. The cleat can be anything, e.g. a concrete stake, piece of OSB or plywood, etc.



Figure 8.36 – Installing cleats around wall openings



4. **Install cross braces for all bucks.** These are required to keep the bucks from bowing due to the pressure of the concrete. Install both horizontal and vertical braces in all doors and windows.



Generally there should be a cross brace at least every 2 feet (610 mm). Lintels over 8 feet (2.4 meters) may require additional shoring.



Figure 8.37 – Bracing wall opening vertically and horizontally

8.11 Additional Bracing

Additional bracing may be needed to connect or bridge at least two intact webs or a web and a buck. You can make this added bracing/cleat with strips of OSB, square patches, dimension lumber, concrete stakes, etc.

Additional cleats or bracing are required for any but are not limited to the following situations:

- Where an internal web has been cut out (to fit around rebar or other obstructions). This illustrates the importance of marking block on the inner face at the time you cut a web so that it later is apparent that the web was cut.
- Where a stack joint exists. A stack joint is when there is no "running bond" pattern between the Amvic ICF block courses. Here the joint between the blocks in a single course are repeated exactly in the same place for the courses to follow. Try to avoid this kind of joint as much as possible.





Figure 8.38 – Bracing a stack joint on both sides of wall.

• Where an offset joint exists. An offset joint is where the interlocking system between the block courses does not line up. This most likely happens when you have cut the last block in a wall section so that it fits the required wall dimension. You may also note that the "running bond" pattern on an offset joint is less than 12 inches which is the recommended overlap of the interlock.



Figure 8.39 – Additional bracing for an offset joint



• Where the edge of the block joins a window or door buck if using wooden bucks (not applicable when using V-Buck).



Figure 8.40 – Cleat installation around a door opening using OSB

IMPORTANT NOTE

This added reinforcement is <u>extremely important</u>. Failure to install this bracing will frequently produce a blowout. The block itself resists blowout as long as the webs are intact and the joint in any course is locked together both above and below by the interlock.



8.12 - Penetrations

Utility Penetrations

Penetrations for utilities must be installed after a storey has been stacked and before the concrete has been poured. Generally all wiring and plumbing is run inside the walls by cutting channels in the EPS foam and installing the wiring and plumbing. Wiring for external fixtures is normally run through the wall only at the point where the external fixture will be placed. (For details on electrical wiring etc. please refer to Appendix E of this manual.)

Penetrations are required for the following:

The following list contains the most common types of penetrations encountered:

- Exterior electrical fixtures
- Exterior electrical outlets and/or fixtures such as pump controls, watering systems, etc.
- Entrances or exits for high voltage electrical wiring
- Low voltage wiring (phone, cable TV, satellite dishes, conventional antennas, alarm systems, gate controls, etc.)
- Dryer vents
- Wall venting chimneys
- Condensate lines or other lines for furnaces and air conditioning
- Water lines
- Water faucets
- Crawl space vents and/or crawl space access doors
- HVAC ducts (for example when the furnace is in the garage and ducts run beneath a raised floor)



needs.

In most cases a piece of ABS or PVC pipe inserted through the wall can be used for a block-out. Cut a hole the same size as the pipe and insert it all the way through the block. Use adhesive foam around the pipe to seal it.





Figure 8.41 – Using PVC pipe for penetration block-outs

8.13 – Suspended Floor Installations

Floor systems are most commonly suspended from rim joists or ledgers that are mechanically attached to the concrete with anchor bolts or with a proprietary tie. The Simpson Strong-Tie[™] ICFLC ledger is highly recommended, as it simplifies installation and can be used with both wood and steel floor joists.

8.13.1 - Ledgers Installed with Anchor Bolts

Anchor bolt sizing, spacing and pattern of installation, must be specified by the structural engineer as it is an essential element of the structural design. The "Prescriptive Method" contains engineering tables for using anchor bolts to connect wood floor joist to ICF walls. (Please check Appendix B of this manual for more information on this subject.)



Installation:

- 1. Cut 8 inch x 8 inch (200 x 200 mm) pieces of OSB or plywood and drill a hole in the center for the anchor bolt.
- 2. Install the anchor bolt through the hole using double nuts on either side. Make sure the anchor bolts used have enough thread to allow double nuts on both sides. With 1/2 inch (13 mm) OSB, you need approximately $3^{1}/_{4}$ inch (83 mm) of thread.



Figure 8.42 – Cutting square OSB boards for anchor bolt installation

3. Cut out a 4 inch (100 mm) wide opening between webs, up to the full height of the ledger. Make the top and bottom cuts with a flare to the inside at 20-30 degrees allowing the concrete to readily fill the cavity.





Figure 8.43 – Cutting openings in EPS between webs



Figure 8.44 – Making the end cuttings flare out



4. Place the OSB & anchor bolts into the holes and attach with four screws, one in each corner. Sheetrock screws work well.



Figure 8.45 – Installing the OSB with anchor bolts onto the EPS openings and securing with sheet rock screws

5. Allow the concrete to gain adequate strength after the pour and before tensioning the anchor bolts.



Figure 8.46 – Allowing the concrete to cure for at least 3 days before removing the OSB square pieces



- 6. Install the ledger, by leveling it precisely below the anchor bolts. Using a reference block, do a drop down takeoff and drill holes slightly larger than the anchor bolts. Place the ledger. Install the required anchor bolt washers and nuts.
- 7. Use standard joist hangers to attach floor joists.



Figure 8.47 – Installing ledger board with proper nuts and washers

8.13.2 - Installing Ledgers with the Simpson Strong-Tie[™] ICFLC Ledger Connector

The Simpson Strong-Tie [™] ICFLC connector is the preferred method for attaching a ledger, primarily because it lowers the cost of construction of the floor. The labor time to install an ICFLC hung ledger is up to 30% less than for an anchor bolt hung ledger.

Simpson's ledger connector system is easy, quick and versatile to use. The perforations in the embedded leg of the ICFLC permit the concrete to flow around it anchoring the ICFLC securely with the block. The exposed flange provides a structural surface for mounting either a wood or a steel ledger. In addition, the new ICFLC & ICFLC-W/CW ledger connector system is engineered to solve the challenges of mounting steel or wood ledgers on insulated concrete form (ICF) walls.

The system comes in three parts:

a. Base plate designated as **ICFLC.** This can be either 16 gauge (0.054 inch thickness) or 14 gauge (0.068 inch thickness) galvanized steel.





Figure 8.48 – ICFLC

- b. Ledger hanger designated as **ICFLC-W** or **ICFLC-CW** made of 16 gauge (0.054 inch thickness) galvanized steel.
- c. Self tapping screws.



Figure 8.49 – ICFLC-W/CW and Screws



Installation:

1. Make a saw cut in the block and insert the long blade of the **ICFLC** piece into the block.



Figure 8.50 – Inserting the ICFLC long blade through the EPS and into the concrete

- 2. Fix it in place with a foam adhesive or a single screw through the small hole in the **ICFLC**, into an adjoining web.
- 3. After the concrete has been poured and has cured for 3-4 days place the ledger in the proper place, level it and temporarily brace it.



Figure 8.51 – Securing the ledger board in place temporarily



- 4. Install the ICFLC-W/CW piece around the ledger.
- 5. Using a driver drill, install the self-tapping machine screws through the holes in the **ICFLC-W/CW**, through the ledger and into the flange of the **ICFLC**.



Figure 8.52 – Installing the ICFLC-W around the ledger board and drilling self tapping screws in the designated holes through to the ICFLC piece

6. Attach the floor joists to the ledger board using standard Simpson Strong-Tie™ or equivalent.



Figure 8.53 – Attaching floor joists to the ledger board with the Simpson Strong-Tie™





8.14 – Beam Pocket – Floor Joist Directly Bearing on ICF Wall

Steel beams and solid wood floor joists may be required to bear on the ICF walls according to the plans. A beam pocket made inside the wall will have to be created as per the following steps:

- 1. Establish the beam dimensions and the elevation at which it will be installed. Use a laser level to mark the elevations on the inside of the EPS panel.
- 2. On one side of the wall where one end of the beam will bear, cut out an opening from the inside and outside EPS panels. Make sure that the cut out pieces are aligned and are larger than the actual beam size by about ¹/₂ inch (13 mm) all around. This will facilitate placing the beam in place.



Figure 8.54 – Cut out opening from the inside and outside EPS panels on one side

3. On the opposite wall where the other end of the beam will be bearing, cut out a piece from the inside EPS panel only. The opening should be aligned with the one on the opposite wall and larger than the actual beam size by 1/2 inch (13 mm) all around.



4. Block the void between the two openings in one wall completely from inside out using waste EPS or wood. The opening in the other wall should also be blocked deep enough into the wall cavity to provide the required bearing length as depicted on the plans.



Figure 8.55 – Blocking void with EPS before pouring concrete

- 5. After the concrete is poured and has gained enough strength, break off the blocking EPS or wood to reveal the beam pocket or voids created in the wall.
- 6. Maneuver the beam in place and secure. Seal the area between the beam and void pocket as required.



Figure 8.56 – Maneuvering wood beam in place to bear on beam pocket



8.15 - Final Adjustments Prior Pouring Concrete

Check corners for plumb. Reconfirm that corners are plumb. If they are not, use additional bracing as required to plumb corners.

Straighten the walls. Set a screw at each corner and install a taut string line around the perimeter of the wall. Use an offset block (2x4 lumber piece) set at the corners, on the top course of forms behind the string line using another block of equal size as a guide to set the wall to the string line.



Many builders prefer to lean the center of each wall inward (toward the bracing) by 1/4 inch or so at the center of the wall segment. Then immediately after the pour, the braces are adjusted to push the wall segment perfectly in line.



Part 9 – Special ICF Installation

9.1 – Overview

This chapter of the manual explains some advanced installation techniques and special flooring systems used with Amvic ICFs. The most common special installations are included below, however, if you have a site specific situation that is not mentioned here, please contact us for assistance.

9.2 - Short Corner Construction

Short corners (notches, bump-outs) are commonly found in residential construction. Depending on the plan dimensions, Amvic 90° forms can be used or a special corner detail can be constructed from straight blocks.

9.2.1 – Short corners using 90° corner blocks with a stack Joint

A short corner can be constructed using at least two 90° corner blocks. Refer to **Appendix C** for minimum corner dimensions using this method. Recommended steps are given below:



Failure to brace a stack joint adequately may lead to a blowout during the concrete pour. Make sure to use additional bracing if necessary.

- 1. Install the first course so that the short legs on both blocks are adjoining as illustrated in figure 9.1 below.
- 2. Install second and consecutive courses of corner blocks in the same manner without alternating forms. This will create a stack joint.
- 3. Ensure that the stack joint is adequately braced on both sides of forms and at every course.



Figure 9.1 – Short corner made of 90 degree forms with a stack joint

9.2.2 – Short corners using 90° corner blocks with running bond pattern

This method also involves at least two 90° degree corner blocks. Refer to **Appendix C** for minimum corner dimensions using this method. The recommended steps are given below:

- 1. Install the first course so that the long leg of one corner block and the short leg from the other block are adjoining as illustrated in figure 9.2 below.
- 2. Install the second and consecutive courses by alternating the forms to create a running bond pattern. (Refer to figure 9.3 below.)



Figure 9.2 – Plan view of two short corners made using 90° forms to create a running bond pattern



Figure 9.3 – A short corner made of 90° forms with a running bond pattern



9.2.3 – Short corners made of straight Amvic ICF

Corners shorter than the minimum allowed by our 90° blocks can be achieved by using straight Amvic ICFs.

Steps in Creating a Custom Short Corner:

- 1. To begin, you will need a minimum of two straight Amvic forms.
- 2. Cut off 4, 6, 8 or 10 inches (100, 152, 203 or 254 mm) depending on which block you are using from one foam panel on each straight block at the edge of the form.



Figure 9.4 – Cutting foam from the end of the straight block on one EPS panel

3. Set the forms in place and glue the cut off pieces to fill the ends of the forms to create a 90° corner.



Figure 9.5 – Setting the two cut forms into position





Figure 9.6 – Using cut off pieces to close the open ends and create a corner

4. Construct two 90° wood forms made of 2x10 and place them on each of the formed EPS corners.



Figure 9.7 – Using 2 x 10 wood forms to support the formed corner

5. Drill a ¹/₂ inch (13 mm) hole through the wood forms and the EPS panels starting about 12 inches (304 mm) from footing or SOG. Insert a ³/₈ inch (9.5 mm) threaded rod through holes in the wood forms. Use plate washers and nuts on both sides to hold the rod securely.





Figure 9.8 – Inserting the threaded rod through the drilled holes



Figure 9.9 – Threaded rod inserted through both wood forms.

6. Continue to cut and stack the blocks to the desired wall height. Place the threaded bolts approximately 16 inches (400 mm) on center vertically. When the concrete has been poured and has set for a few hours, remove the wooden forms and cut the threaded rod so that it is flush with the concrete surface. Use foam adhesive to fill the holes in the EPS panels.



9.3 – Radius Wall Construction

Amvic manufacturing facilities provide pre-cut radius forms which ensure that courses fit together easily and installation goes smoothly with minimal labor costs. Pre-cut radius forms are tongue and groove cut on the inside EPS panel and slit cut on the outside EPS panel. See Figure 9.10.



Figure 9.10 – Pre-cut Amvic radius blocks. Tongue and groove cut on the inside and slit cut on the outside

Radius forms can also be constructed by the contractor on site using straight Amvic ICF.

Installing Radius Forms:

- 1. On the footings/SOG, set a template or guide board to match the desired radius.
- 2. Apply a bead of spray foam to the bottom of the form along the tongue and groove cut (for pre-cut forms), bend the form into shape and install it.





Figure 9.11 – Bending and securing the radius form into place

3. After laying the first course, install the horizontal rebar as per engineering requirements and/or local building codes.



Figure 9.12 – Several courses of Amvic pre-cut radius blocks installed



- 4. Support the outside of the form using bracing or plumbers pipe strapping.
- 5. Brace the wall adequately before pouring concrete.

For contractors who opt to cut the ICF on site, please refer to figures 9.13 and 9.14 as well as tables 9.1 and 9.2 for information on radius dimensions and cutting blocks.



Figure 9.13 – Radius wall tongue & groove and slit cut details



Figure 9.14 – Radius wall bent to shape



Wall Outside Radius (Imperial)	Tongue & Groove Cut Width "W" Spaced @ 6 inch O/C Decimal Inches				
	4″ ICF	6″ ICF	8″ ICF	10″ ICF	
3'-0" ft (36 inch)	1.714″	2.095″	N/A	N/A	
3'-6" ft (42 inch)	1.469″	1.796″	2.122″	N/A	
4'-0" ft (48 inch)	1.286″	1.571″	1.857″	2.143″	
4'-6" ft (54 inch)	1.143″	1.397″	1.651″	1.905″	
5'-0" ft (60 inch)	1.029″	1.257″	1.486″	1.714″	
6'-0" ft (72 inch)	0.857″	1.048″	1.238″	1.429″	
7'-0" ft (84 inch)	0.735″	0.898″	1.061″	1.224″	
8'-0" ft (96 inch)	0.643″	0.786″	0.929″	1.071″	
9'-0" ft (108 inch)	0.571″	0.698″	0.825″	0.952″	
10'-0" ft (120 inch)	0.514″	0.629″	0.743″	0.857″	
12'-0" ft (144 inch)	0.429″	0.524″	0.619″	0.714″	
14'-0" ft (168 inch)	0.367″	0.449″	0.531″	0.612″	
16'-0" ft (192 inch)	0.321″	0.393″	0.464″	0.536″	
18'-0" ft (216 inch)	0.286″	0.349″	0.413″	0.476″	
20'-0" ft (240 inch)	0.257″	0.314″	0.371″	0.429″	
25´-0" ft (300 inch)	0.206″	0.251″	0.297″	0.343″	
30'-0" ft (360 inch)	0.171″	0.210″	0.248″	0.286″	
35'-0" ft (420 inch)	0.147″	0.18 ″	0.212″	0.245″	
40'-0" ft (480 inch)	0.129″	0.157″	0.186″	0.214″	
45 '-0" ft (540 inch)	0.114″	0.14 ″	0.165″	0.19 ″	
50'-0" ft (600 inch)	0.103″	0.126″	0.149″	0.171″	

Table 9.1 – Cut out opening width "W" for varying radii (Imperial)

Wall Outside Radius (Metric)	Tongue & Groove Cut Width "W" Spaced @ 152 mm O/C Millimetres				
	100 mm ICF	152 mm ICF	200 mm ICF	254 mm ICF	
0.90 m	44.2 mm	54.1 mm	N/A	N/A	
1.00 m	39.8 mm	48.7 mm	57.5 mm	N/A	
1.10 m	36.2 mm	44.2 mm	52.3 mm	60.3 mm	
1.20 m	33.2 mm	40.6 mm	47.9 mm	55.3 mm	
1.30 m	30.6 mm	37.4 mm	44.2 mm	51.0 mm	
1.40 m	28.4 mm	34.8 mm	41.1 mm	47.4 mm	
1.50 m	26.5 mm	32.4 mm	38.3 mm	44.2 mm	
1.75 m	22.8 mm	27.8 mm	32.9 mm	37.9 mm	
2.00 m	19.9 mm	24.3 mm	28.8 mm	33.2 mm	
2.25 m	17.7 mm	21.6 mm	25.6 mm	29.5 mm	
2.50 m	15.9 mm	19.5 mm	23.0 mm	26.5 mm	
3.00 m	13.3 mm	16.2 mm	19.2 mm	22.1 mm	
3.50 m	11.4 mm	13.9 mm	16.4 mm	19.0 mm	
4.00 m	10.0 mm	12.2 mm	14.4 mm	16.6 mm	
5.00 m	8.0 mm	9.7 mm	11.5 mm	13.3 mm	
6.00 m	6.6 mm	8.1 mm	9.6 mm	11.1 mm	
8.00 m	5.0 mm	6.1 mm	7.2 mm	8.3 mm	
10.00 m	4.0 mm	4.9 mm	5.8 mm	6.6 mm	
12.00 m	3.3 mm	4.1 mm	4.8 mm	5.5 mm	
14.00 m	2.8 mm	3.5 mm	4.1 mm	4.7 mm	
16.00 m	2.5 mm	3.0 mm	3.6 mm	4.1 mm	

Table 9.2 – Cut out opening width "W" for varying radii (Metric)



9.4 – T-wall Construction

T-walls require special attention before the concrete pour. Proper bracing and alignment are essential.

Constructing T-Walls:

- 1. Locate the T-wall intersection as you lay the first course.
- 2. Cut the Amvic blocks appropriately and butt them together to form the Tintersection. Use zip ties (or equivalent) to secure the blocks together.



Figure 9.15 – Placing the cut forms together and tying intersecting blocks to form a T-wall. Use metal or plastic wire ties supplied by Amvic

3. Install horizontal reinforcing steel bars including bent 90° corner bars with proper lap splice length as per engineering requirements and/or local building code.





Figure 9.16 – Install horizontal reinforcing steel bars as each course is laid

- 4. Continue stacking subsequent courses of block until the full wall height is achieved.
- 5. Check walls for level. If the walls are level, run a bead of spray foam down along each side of the forms on the T-wall.
- 6. For below grade and main floor level walls, additional bracing **MUST** be installed on the exterior side of the intersection. Failure to brace properly may cause a blow out during the concrete pour.



Figure 9.17 – Bracing installed on the exterior side of the T-wall



- 7. For above grade levels where there is no ground surface to anchor the exterior bracing, insert wire ties (or equivalent) through the forms around to each side of the intersecting T-Walls. Do not tighten the zip ties yet. (Figure 9.17 below)
- 8. Once the wall is formed to the desired height, slide a 2x6 down the backside of the wall that runs straight through in between the forms and the tie wire. Tighten the wire tie to hold the lumber in place. Make sure the wire ties are installed at every course. (Figure 9.17 below)



Figure 9.18 – Securing T-wall forms together with 2x6 lumber and zip tie




9.5 – Brick Ledge Applications

A brick ledge is usually required to support the gravity loads of exterior masonry applications such as brick, natural stone veneer or any other exterior which cannot be supported by screwing into the Amvic block webs.



Figure 9.19 – Brick ledge form used for supporting exterior masonry veneer

Amvic has three brick ledge forms available. These are installed in exactly the same manner as straight blocks and provide the space and structural support needed for your exterior brick veneer application.

Alternatively the brick ledge forms can be used with the ledge support on the interior side of the building to provide support for flooring systems such as wood joists, steel joists, etc.





Figure 9.20 – Brick ledge form used for supporting interior floor system



Note

The main reinforcing steel stirrups for Amvic brick ledge forms should be designed to requirements outlined by a local licensed engineer and/or governing building code. Proper stirrup size and spacing is essential for the structural performance of the brick ledge.



9.5.1 – Installing Amvic Brick Ledge Blocks

Amvic brick ledge forms are specially designed so they can be installed as a complete course at the required level just like straight forms. They feature a notch to place the horizontal stirrup hanger on which the main steel stirrups are attached and anchored.



Figure 9.21 – Cross section of 8 inch brick ledge form with main reinforcing stirrup detail



Figure 9.22 – Amvic brick ledge form installed as a single course





Figure 9.23 – Completed brick ledge installation for exterior brick veneer support

9.5.2 – Custom Design Brick Ledge Forms

It is possible to build brick ledge forms if shop drawings and structural design requires a different design and profile than provided by the Amvic brick ledge form. Custom forms can be shaped using light gauge sheet metal or wood. A brief outline of the installation procedure is given below:

- 1. Use regular Amvic straight ICF blocks as normal.
- 2. As per shop drawing details cut out the EPS between the block webs at the correct elevation.



Figure 9.24 – Cutting out EPS between webs



3. Pre-bend the main steel stirrups for the brick ledge design as per the engineering requirements and install in place.



Figure 9.25 – Placing pre-bent brick ledge stirrups

4. Attach the custom brick ledge form to the Amvic straight forms using sheet metal strapping and screwing above and below the brick ledge at preferably 12 inch (305 mm) O/C.



Figure 9.26 – Attaching custom metal forms to the Amvic ICF with sheet metal strapping



9.5.3 – Installing Standard Brick Veneer

Whether you have used the Amvic brick ledge forms or custom made forms, standard brick veneer can be installed in the same manner as regular construction bearing on the ledge support.



Figure 9.27 – Laying standard brick veneer on the brick ledge support

Follow building code requirements for typical flashing details with dripping edge, and minimum air space. Standard brick ties are screwed into the Amvic webs. Horizontal and vertical spacing of the brick ties to be determined by engineering requirements.



Figure 9.28 – Standard brick ties screwed into the Amvic webs



9.6 - Gable Ends

Gable ends can be formed using one of the two methods outlined below.

1. Stepping Forms

Form the gable end by stepping the forms back as you stack to the peak. Block off the vertical ends of the forms and pour concrete. After the pour, the rest of the wall is framed in.

2. Cutting the Forms

Form the gable end by cutting the forms to the appropriate slope of the roof. Secure lumber to each side of the forms so the top of the lumber is aligned with the top of the forms. This gives added form support and provides a furring surface to fasten plywood. Cap off the top of the forms if necessary.



Figure 9.29 – Cutting forms to the shape of the gable end pitch



9.7 - Pre-cast Concrete Floor Systems (Hollow Core/Spancrete)

Hollow Core (HC) slabs are a widely used flooring system, consisting of pre-cast elements in which tubular cores are hollowed out. The elements are typically 4 ft (1.2 m) wide and made of high quality concrete. They are reinforced by prestressed strands in the spanning direction only,



Engineering is required for this floor system.

which results in a very economical production process.

Installing a Pre-cast floor system:

- 1. Terminate the concrete wall at the desired height.
- 2. Set dowel bars as per slab manufacturer design and engineering.
- 3. Install the pre-cast slabs after the walls have gained enough strength.
- 4. Pour the floor topping.



Figure 9.30 – Maneuvering a pre-cast hollow core slab for placement on an ICF wall





Figure 9.31 – A pre-cast slab panel placed on an ICF wall



9.8 - Hambro® Composite Concrete Floors

The Hambro®flooring system consists of proprietary open web steel joists. The joists are shaped into a truss with a special top chord and are supported from wall to wall with a typical spacing of 4¹/₄ ft (1.25 m). Concrete is poured on plywood sheets that are supported by the Hambro® joists. When the concrete has gained enough strength, the plywood sheets are stripped off and are re-used on other floors.

Installing the Hambro[®] floor on Amvic ICF walls:

- 1. Pour the concrete into the Amvic ICF wall to the underside of the concrete slab.
- 2. Wet set dowels connecting concrete slab to walls as per engineering requirements.
- 3. When the concrete has gained adequate strength, install the Hambro[®] flooring system including steel joists, plywood sheets, roll bars and steel reinforcement as recommended by Hambro[®] technical and/or engineering manual.





Figure 9.32 – Typical Amvic ICF wall with Hambro® Flooring





9.9 - Composite Steel Deck

Composite steel decks are made from plain or galvanized steel sheet rolled into ribbed profiles. The ribs are typically 3 inches (7.62 mm) deep and 6 inches (152.4 mm) wide and spaced at 12 inches (305 mm) on center.

The steel deck can be used strictly as a formwork for concrete or it can be fabricated to bond with concrete and act together to form a composite section.

For composite deck, no additional reinforcement is typically used. When noncomposite deck is used, reinforcing steel bars are placed in the slab. Generally, 2 to 3 inches (50 to 76 mm) of concrete is placed over the ribbed deck to form a total slab thickness of 5 to 6 inches (125 to 15 mm).

Installing Composite Steel deck with Amvic ICF:

- 1. Pour concrete into the Amvic ICF walls to the underside of the concrete slab.
- 2. Wet set dowels to connecting concrete slab to walls as per engineering requirements.
- 3. When the concrete has gained adequate strength, install the steel decking and reinforcing steel as per manufacturer's technical/engineering manual or as specified by a local licensed engineer.
- 4. Pour concrete for the composite steel deck.





Figure 9.33 – Illustration of typical composite floor on Amvic ICF wall



9.10 – AmDeck® Floor and Roof System

The AmDeck® Floor and Roof System consists of modular Expanded Polystyrene (EPS) forms. When installed the EPS forms provide a stay in place formwork to construct oneway concrete pan joist floors or roofs. The system utilizes 10 inch (254 mm) deep light gauge steel framing studs to carry temporary construction loads until concrete has been poured and gained adequate strength. The light gauge steel joists also act as furring strips to attach ceiling interior finish such as sheetrock. Please refer to our separate technical manual for installation guidelines and engineering details.



Figure 9.34 – AmDeck® Floor and Roof System



Figure 9.35 – Cross section of an AmDeck form





Figure 9.36 – Installing the AmDeck® Floor and Roof System





Part 10 – Concrete Basics

10.1 - Overview

This section of the manual covers the fundamentals of concrete. New Amvic ICF installers should review this information before proceeding to the following section which deals with concrete placement techniques recommended for Amvic ICF.

10.2 - Concrete Fundamentals

10.2.1 - Concrete Composition

Concrete is a mixture of **paste** and **aggregate**. The paste binds the aggregate (sand and gravel or crushed stone) into a rocklike mass.



Figure 10.1 - Illustration of typical concrete mix constituents

Cement Paste (also known as binder)

The paste is composed of cement, supplementary cementitious materials, water, and purposely entrained air. Cement paste ordinarily constitutes about 25% to 40% of the total volume of concrete. The volume of cement is usually between 7% and 15% and the water between 14% and 21%. Air content ranges up to about 8% of the volume of the concrete.

There are many different types of cement available but for the purpose of this manual, we will concentrate on the most common, Portland Cement.



In the United States Portland cements will meet the specifications set forth by **ASTM C150**.

ASTM standards are the most widely used and referenced specifications for cement and concrete materials. **ASTM C150** covers eight (8) types of Portland cement:

Type I Normal Type IA Normal, air-entraining Type II Moderate sulphate resistance Type IIA Moderate sulphate resistance, air-entraining Type III High early strength Type IIIA High early strength, air-entraining Type IV Low heat of hydration Type V High sulphate resistance

In Canada, Portland cements are manufactured to meet the specifications of the **Canadian Standards Association CSA A5**. The five (5) different types of cements covered under this standard are:

Type 10 Normal portland cement Type 20 Moderate portland cement* Type 30 High-early-strength portland cement Type 40 Low-heat of hydration portland cement Type 50 Sulphate-resistant portland cement

* Moderate with respect to the heat of hydration or sulphate resistance.

Aggregates (also known as filler)

There are two categories of aggregate used in concrete:

Coarse aggregates (gravel) with particle sizes ranging in size from 6 inch (150 mm) to about 0.05 inch (1.3 mm).

Fine aggregate (sand) consist of natural or manufactured sand with particle sizes ranging from 3/8 inch to dust size.

The selection of aggregates used in concrete is important since it makes up approximately 60% to 75% of the total volume of concrete. Aggregates should consist of particles with adequate strength and resistance to exposure conditions and should not contain materials that will cause a chemical reaction with the paste that may lead to deterioration of the concrete (e.g. sulfates, chlorides etc.)



10.3 - Quality of a Concrete Mix

10.3.1 - Water/Cement Ratio (W/C)

The most important factor which determines the quality of a concrete mix is the quantity of water used versus the quantity of cement used (by weight), also known as the **Water/Cement ratio**.

Water is a critical ingredient in the cement paste. It causes the hardening of concrete through a process called **Hydration**. This is a chemical reaction in which the major compounds in cement form chemical bonds with water molecules and become hydrates or hydration products. This causes the paste to harden and binds the concrete ingredients together.

Too much water reduces concrete strength, while too little will make the concrete unworkable. Concrete needs to be **workable** so that it may be consolidated and shaped into different forms (i.e. walls, columns, etc.). Because concrete must be both strong and workable, a careful balance of the cement to water ratio is required when making concrete.



Figure 10.2 - Relationship between W/C and concrete strength. ©2006 *Cement Association of Canada, EB101-7 figure 1-17.*

10.3.2 - Concrete Strength

There are two types of concrete strengths: **Compressive** and **Flexural**. For most intended structural purposes the compression strength is what concerns the design engineer.



Compressive Strength Test

The cylinder test according to **ASTM C39 standard** (**CSA A23.2-9C test method**) is the test most commonly used for determining concrete compressive strength in the USA, Canada and continental Europe. A 12 inch (305mm) high by 6 inch (150mm) wide cylinder of concrete is cast and cured for the appropriate time (usually 28 days). It is then compressed between the two parallel faces. The stress at failure is taken to be the compressive strength of the concrete. It is generally expressed in pounds per square inch (**psi**) or Mega-Pascals (**MPa**) at an age of 28 days.

Concrete mix strengths used in ICF will most likely range between **2500 psi - 4000 psi** (**17 MPa - 30 MPa**).

Flexural Strength Test

Flexural strength is the strength of concrete to bending and is usually measured using **ASTM C78 standard (CSA A23.2-8C test method)** with a simple beam and third point loading. Most general-use concrete has a flexural strength between **500 psi - 700 psi (3.4 MPa - 4.8 Mpa)**.



Figure 10.3 - Testing the concrete cylinder for compressive strength (left) and concrete beam for flexural strength (right). ©2006 Cement Association of Canada, EB101-7 figure 16-15

10.3.3 - Concrete Workability

Workability is the ease of transporting, placing, consolidating, and finishing freshly mixed concrete. Workability depends on water/cement ratio, admixtures, aggregate (shape and size distribution) and age (level of hydration). Raising the water content or adding plasticizer will increase the workability.



Slump Test

Workability is usually measured using the **slump** test according to **ASTM C 143** standard (**CSA A23.2-5C test method**) using the slump or Abrams cone. This is an inverted cone, 12 inch (305 mm) tall and is open on both ends. The top is 4 inch (100 mm) wide and the bottom 8 inch (200 mm) wide. Fresh concrete is placed in the cone and "rodded" with a steel rod to compact the concrete. The cone is removed and placed next to the pile of concrete. The difference between the top of the slump cone and the top of freshly molded concrete is the slump.

A relatively dry sample will slump very little, and be given a slump of 1 or 2 inches (25 or 50 mm), while a relatively wet concrete sample may slump as much as 6 or 7 inches (150 to 175 mm).



Figure 10.4 - Concrete mix with low slump. ©2006 Cement Association of Canada, EB 101-7 figure 16-2



Figure 10.5 - Concrete mix with high slump. ©2006 Cement Association of Canada, EB 101-7 figure 16-2

10.3.4 - Concrete Curing

This is the process by which the environment (temperature & humidity) enclosing the freshly poured concrete is controlled for a specific period of time to allow the concrete mix to achieve its design strength and durability.

The hydration process during which water and cement react and harden takes place generally over two stages. The first stage takes place quickly and is sometimes over in a few hours where the concrete mix basically turns into a solid mass. The second stage is a much slower one during which the hydration process continues and concrete keeps gaining strength. This can even take up to several years. Without water, this elongated hydration process would actually stop. Imagine if we were to leave freshly poured concrete in the open air. The humidity within the concrete mix would drop very quickly until there would not be enough to sustain the hydration process



causing it to stop altogether. This would prevent the concrete from gaining its required design strength.

A major benefit in using Amvic Insulating Concrete Forms is that they are a stay in place forming system. The EPS panels enclose the concrete mass creating an optimum environment and preventing the moisture in the concrete from evaporating for an extended period of time as opposed to conventional forming systems. This means that the concrete will keep hardening and gaining strength over the long term without the need to use additional expensive curing methods or agents.



Figure 10.6 - Illustration showing effect of curing on concrete strength over time. ©2006 Cement Association of Canada, EB 101-7 figure 12-2

10.3.5 - Entrained Air (Micro air pockets)

Entrained air consists of microscopic air bubbles introduced in concrete by adding certain admixtures. The microscopic bubbles provide space within the paste to relieve hydraulic pressure when concrete freezes in cold weather. Without the bubbles, the paste may crack when it freezes because water expands 9% in volume when it turns to ice.

Entrained air also has the effect of improving the workability of fresh concrete.

10.3.6 - Entrapped Air (Macro air pockets)

Entrapped air consists of large air voids which get trapped in concrete during mixing and placing. Entrapped air lowers concrete quality and strength and proper concrete consolidation should always be used to eliminate the air voids as much as possible.



10.4 - Concrete Admixtures

Admixtures are materials other than cement, aggregate and water that are added to concrete either before or during its mixing to alter its properties such as workability, curing temperature range, set time or color. There are two main types of admixtures widely available in the market: **Chemical and Mineral**.

Tables 10.1 and 10.2 below outlines the uses of admixtures used in concrete.

Type of Chemical Admixture	Effect on Concrete Mix
Accelerators (ASTM C494, Type C)	Accelerate setting and early-strength development
Air-entraining admixtures	Improve durability in environments of freeze-thaw, deicing chemicals,
	sulfate, and alkali reactivity
	Improve workability
Alkali-reactivity reducers	Reduce alkali-reactivity expansion
Corrosion inhibitors	Reduce steel corrosion activity in a chloride environment
Permeability reducers	Decrease permeability
Retarders (ASTM C494, Type B)	Retard setting time
Super-plasticizers (ASTM C1017, Type 1)	Flowing concrete
	Reduce water-cement ratio
	Reduce water demand (minimum 12%)
Water reducer (ASTM C494, Type A)	Reduce water demand at least 5%
Workability agents	Improve workability

Table 10.1 - Commonly used chemical admixtures and their uses

Mineral admixtures affect the nature of the hardened concrete through hydraulic or pozzolanic activity. Pozzolans are cementitious materials and include natural pozzolans (such as the volcanic ash used in Roman concrete), fly ash and silica fume.

Type of Mineral Admixture	Effect on Concrete Mix	
Cementitious	Hydraulic properties	
	Partial cement replacement	
Pozzolans	Pozzolanic activity	
	Improve workability, plasticity, sulfate resistance	
	Reduce alkali reactivity, permeability, heat of hydration	
	Partial cement replacement	
	Filler	
Pozzolanic and cementitious	Same as cementitious and pozzolan categories	
Nominally inert	Improve workability	
	Filler	

Table 10.2 - Commonly used mineral admixtures



10.5 - Specifications of Concrete for Amvic ICF

The following table provides suggested concrete mix specifications to be used with Amvic ICF. This table is only a guideline and the design engineer may choose to deviate from the given values as required.

	Value			
Specification Description	4 in. ICF 100 mm	6 in. ICF 150 mm	8 in. ICF 200 mm	10 in. ICF 254 mm
Min 28 day compressive strength F'c*	2500 psi	2500 psi	2500 psi	2500 psi
	20 Mpa	20 Mpa	20 Mpa	20 Mpa
Recommended Slump**	6 in.	6 in.	5-6 in.	5-6 in.
	150 mm	150 mm	125-150 mm	125-150 mm
Recommended max water to cement ration W/C	0.55	0.55	0.55	0.55
Recommended max aggregate size	3/8″	1/2″	3/4″	3/4″
	10 mm	13 mm	19 mm	19 mm
Recommended air entrained %	3-5%	3-5%	3-5%	3-5%
Recommended cement type***	Type 10	Type 10	Type 10	Type 10
	Туре І	Type I	Туре І	Type I

* Values given are minimum values based on USA and Canadian building codes.

** Slump values given are optimum for workability and hydrostatic pressure on the blocks during concrete pour

*** Other types may be used with the consent and supervision of the design engineer.

Table 10.3 - Guideline specifications for concrete mix



Part 11 – Concrete Placement

11.1 – Overview

This part of the manual covers the concrete pouring and consolidation process with best applied practices that have been acquired over the years. This information is a valuable resource to help you complete a successful project.

11.2 – Pre-Pouring Checklist

Checking Walls

- ☐ Make sure walls are straight, plumb, square and level.
- Check if corners are square and plumb.
- Check if top course of forms been secured.



Extra copies of the following checklist should be made to ensure everything is in order prior to pouring concrete.

- ☐ If there will be a second pour check if top of forms been covered to avoid concrete filling the interlocking system.
- Check if string lines have been placed around perimeter of wall.

Checking Wall Openings

- Check if wall openings are at the correct height elevation.
- Check if window and door openings are located correctly and if the openings are plumb and square.
- Check if anchorage for buck material has been provided.

Checking Reinforcing Steel

Check if vertical and horizontal reinforcing steel comply with the specified engineering and/or local building code requirements.

Check if reinforcing steel bars around wall openings are installed.

Check if reinforcing steel bars for lintels (window/door headers) are installed and as per the specified engineering/local building code requirements.



Checking Floor Connections

- Check if all floor connections have been installed including anchor bolts, Simpson Strong Tie[™] connections etc.
- Check if beam pockets have been provided (if required for the job).
- Check if sill plate anchor bolts and tie down straps have been located and are clearly marked for wet-setting into the concrete.

Checking Bracing & Alignment

- Check if alignment and bracing system is properly installed and planking has been secured.
- Check if all T-joints braced adequately and properly.
- Check if all offset joints, stack joints are braced adequately and properly.
- ☐ For bracing system higher than 10 feet off the supporting surface make sure to have a proper handrail system installed as per OSHA requirements in the USA or OHSA requirements in Canada.

Checking Wall Penetrations

Check that all penetrations (Electric, plumbing, HVAC, dryer vent etc.) have been accommodated and all form support has been installed.

Checking Tool, Equipment and Materials

- ☐ Make sure that you have two working mechanical vibrators on the job site. One will be used to consolidate the concrete during the pour while the other will act as a standby should the first one break.
- ☐ Make sure the concrete ordered is acceptable for the method of placement and engineering or local building code requirements.
- ☐ Make sure that you have coordinated and confirmed the delivery times for both the boom pump and the concrete.
- ☐ Make sure you have a "blowout kit" prepared and ready. (Refer to section 11.12)



Checking Jobsite

Check that the site is clean and there is enough room for trucks, workers, etc.

11.3 – Safety Tips for Handling and Placing concrete

The following are suggestions, precautions and safety measures recommended for anyone handling wet concrete.

Wear Hard Hats

Wear a hard hat for head protection. A construction site presents a variety of hazards that can cause serious head injury.

Protect your Skin

Wet fresh concrete is very abrasive to the skin. It can cause skin irritations, chemical burns and prolonged contact can cause third degree burns. Therefore we recommend to:

- 1. Wear waterproof gloves, long sleeve shirt, long pants and rubber boots.
- 2. Use waterproof pads to protect your skin, knees, elbows, or hands from contact with fresh concrete during finishing.
- 3. Flush eyes and skin that come in contact with fresh concrete immediately with clean water.
- 4. Rinse clothing saturated from contact with fresh concrete quickly with fresh water.

Protect your Eyes

Wear full cover goggles or safety glasses with side shields during the concrete pour.



11.4 - Rate of Pouring Concrete

When fresh concrete is poured into Amvic ICF, it exerts lateral pressure on the sides of the EPS panels. The intensity of this pressure depends on several factors including:

- a. Rate of concrete pour
- b. Unit weight of concrete
- c. Type of cement
- d. Concrete slump
- e. Concrete temperature
- f. Height of pour
- g. Depth of internal vibration

Amvic ICF blocks have an ultimate forming capacity of **864 lbs/sq.ft** (**41.4 KPa**) as tested according to section 6.4.4 of the Canadian CCMC technical guide for modular expanded polystyrene concrete forms.

Table 11.1 below shows the design lateral pressure for newly placed concrete that should be used for the wall formworks. The pressures are based on the recommendations and formulas given by **ACI 347-04**.

Lateral Pressure of Vibrated Concrete ^{1,2}			
Pour Rate	S0° F 70° F Pour Rate 10° C 21° C		
10111		To 14 ft (4.2 m) Pour Height	To 14 ft (4.2 m) Pour Height
1	305	600 psf	600 psf
2	610	600 psf	600 psf
3	914	690 psf	600 psf
4	1219	870 psf³	660 psf
5	1524	1050 psf³	720 psf

 $1-Maximum\ pressure\ need\ not\ exceed\ w*h,\ where\ ``w"\ is\ the\ unit\ weight\ of\ concrete\ (lbs/ft')\ and\ ``h"\ is\ maximum\ height\ of\ pour\ in\ feet$

2- Based on Types I and III cement concrete density of 150 pcf (2400 Kg/m³) and 7 inch (178 mm) maximum slump, without additives and a vibration depth of 4 feet (1.2 m) or less

3- Lateral Pressure exceeds Amvic ICF forming capacity

Table 11.1 – Concrete pressures for walls internally vibrated

The recommended pour rate for Amvic ICF is between **3 to 4 ft/hr (915 to 1200 mm/hr)**. However, for Amvic ICF concrete pour rates of up to 5 ft/hr (1.5 m/hr) are possible in warm temperatures (70° F or 21° C).



11.5 – Methods & Equipment for Pouring Concrete

Concrete can be placed in several ways depending on the application and job-site conditions available. The following table summarizes the most common methods for placing concrete in Amvic ICF.

Placement Method	Type of work best suited for	Advantages	Special Notes
Concrete Boom Pump	Used to convey concrete directly from discharge point like concrete truck mixer into Amvic ICF forms.	Different boom reaches available. Delivers concrete in continuous stream. Pump can move concrete vertically and horizontally. Pump mounted on truck has high mobility and very versatile to many pouring situations.	For maximum efficiency, schedule concrete trucks appropriately to provide continuous supply of concrete to the pump with minimal idle times. Employ 3", 2.5" or 2" reducers and flexible hose at end of pipeline to reduce rate of concrete pour.
Crane & Bucket	Used mainly for conveying concrete above ground level directly from discharge point into Amvic ICF forms.	Provides clean discharge and there are many bucket capacities available. Cranes may be used to convey other materials such as reinforcing steel.	Make sure bucket has a handle to control the rate of concrete discharge. Select fitting at bottom of bucket to suit placement in ICF walls.
Chutes on Truck Mixers	For conveying concrete to a lower level, usually below gound level directly from discharge point into Amvic ICF forms.	Very economic and easy to maneuver. No power required since gravity does most of work.	Slopes should range between 1:2 and 1:3. Chute should be adequately supported in all positions. End discharge arrangements required to prevent segregation.
Belt Conveyors	For conveying concrete horizontally or to a higher or lower level. May be used to discharge concrete directly into Amvic ICF but usually positioned between main discharge and second discharge point	Belt conveyors have adjustable reach, traveling diverter and variable speed for forward and reverse. Can place large volumes of concrete for limited access situations.	End discharge arrangements needed to prevent segregation. In extreme weather conditions, long reaches of belt may need cover to protect concrete.

Table 11.2 – Most common methods for concrete placement used with Amvic ICF





Figure 11.1 – Using boom pump to pour concrete in Amvic ICF

11.5.1 – Placing Concrete with a Boom Pump

It is highly recommended to use a double "S" bend or double 90° fitting at the discharge point of the pump line. This will help reduce the flow rate of concrete to the desired levels. A flexible hose of appropriate length is always recommended for controlling flow rates and for safety issues.



Using a boom pump to pour concrete is the most preferred and efficient method.

Many ICF contractors also use 3, $2^{1}/_{2}$ or 2 inch reducer fittings with a flexible hose. Although the reducers may make it more convenient to pour the concrete, they can also have the effect of increasing the pressure and flow rate at which the concrete is discharged.

It is up to the contractor to use whatever fittings he is comfortable with as long as the concrete is poured at the recommended rates and without damaging the forms.



Tip

Discuss your pour thoroughly with your pump operator when you place your order. Make sure the concrete ready mix company has the pump line fittings required like "S" bend connection, reducers and flexible hose.



11.5.2 – Crew Size

On pour day a crew of 4 is the minimum to work with plus the pump operator. At least three crew members are needed on the scaffolds; one handling the hose and two working the vibrator. One crew member is required on the ground for filling and blocking window bucks, cleaning slops, untangling the electrical cords of the vibrator, etc. A crew of 5-6 is optimal.

11.6 – Pouring the Concrete

Important Notes!

Remember, concrete should always be poured at a steady rate and in lifts between 3 to 4 ft (915 to 1200 mm) maximum at a time. Using the recommended pour rate of 3 to 4ft/hr a typical 9 ft (2.7 meters) high wall should be poured within a minimum span of 3 hours.

If you are using a boom pump, it is important to have the operator dump the "pump prime" (sludge that initially comes out of the hose) outside of the forms or back into the pump.

Pouring Concrete in 90° Corners

It is advisable to start pouring concrete at a corner and then work your way around the wall perimeter in a circular manner. However, corners require special attention during the pour because of their geometry. Corner blocks are always subjected to more lateral pressure due to concrete placement than the straight blocks. The key is to equalize the concrete pressure on both sides of corner blocks as much as possible. The following steps should be followed:



DO NOT allow concrete to accumulate on one side of a corner block at any time. This may cause a blowout during the concrete pour.

- 1. Start by pouring concrete at approximately a distance of 2 to 3 ft (0.6 to 0.9 meters) away from the corner center.
- 2. When filling the walls to the required lift height, make sure to pour concrete at approximately the same rate on both sides of the corner block by moving the pump hose or discharge point in a back and forth rhythm.





Figure 11.2 – Pouring concrete for 90° Corner

- 3. Concrete should not be poured for a subsequent lift in and around the same corner block until at least an hour has passed.
- 4. Ensure proper concrete consolidation.

Pouring Concrete around Windows/ Doors & Straight Sections

 Typically, contractors will start by bringing the boom hose down and filling the bottom of the window bucks first. Each window bottom should be consolidated using a concrete vibrator (refer to section 11.7 for details on concrete consolidation) and then screeded off.



Depending on your slump, it is advisable to nail or screw an OSB cap over the opening(s) in the bottom of the window buck, to prevent the concrete from bulging up or overflowing when you pour down the sides from above in the next passes.





Figure 11.3 – Pouring concrete at window sills

- 2. Window and door bucks should not be completely filled on one side at one time. Fill both sides of the opening using a backand-forth rhythm. Avoid spilling concrete into the window and door headers (also known as lintels).
- 3. Pour concrete normally into straight sections up to the required lift height.







With a 2-3 inch (50 -76 mm) reducer on the pump hose, it frequently is possible to hold back the concrete briefly by placing your rubber-gloved hand over the end of the nozzle and quickly swinging the hose to the other side of the window or door.



Figure 11.4 – Using internal vibrator to consolidate concrete

5. Stop short of pouring concrete into a second corner by approximately 2 to 3 ft (0.6-0.9 m). Follow the recommendations given above for concrete placement in corner blocks.



11.7 – Quality Control

11.7.1 – Slump

It is recommended to perform a field slump test on the first batch of concrete that arrives on the jobsite. If the slump is too low or too high, then you can immediately inform the concrete supplier to adjust the concrete mix appropriately for the subsequent batches. This will also give a good feel for what the consistency of a proper concrete mix should be like with Amvic ICF.

If a special inspection is required by the local building code then an engineer will be on the jobsite and this test may become a requirement not an option.



Figure 11.5 – Performing the slump test in the field

11.7.2 – Compressive Strength

It is recommended to randomly retain fresh concrete into proper size cylinders. The cylinders will later be tested by a certified concrete laboratory for compressive strength at 28 days to ensure that concrete used on a specific jobsite meets the specified compressive strength by the local licensed engineer/building code requirements.

If a special inspection is required by the local building code then an engineer will be on the jobsite. Taking random samples of concrete for compressive strength testing becomes a requirement and not an option.





Figure 11.6 – Random sampling of concrete for compressive strength testing at 28 days

11.8 – Concrete Consolidation

11.8.1- What is Consolidation

Consolidation is the process of compacting freshly poured concrete. Concrete *MUST* be consolidated to:

- 1. Eliminate stone pockets, honey-comb, and entrapped air.
- 2. Mold concrete within the forms and around embedded items.
- 3. Ensure reinforcing steel is properly embedded and bonded to the concrete paste.

11.8.2 – Methods of Consolidation

The concrete industry has accepted 2 types of concrete consolidation – internal and external.


Internal Consolidation

- 1. Mechanically using a proper size immersion type concrete vibrator (also known as poker or spud vibrators). This is the most preferred method for adequate consolidation.
- 2. Manually using steel rods and "rodding" the concrete. This is not a practical method for use with Amvic ICF and does not provide adequate consolidation of the concrete.



Important Note!

Ensure that you use the proper size concrete vibrator for adequate concrete consolidation. Using hand rodding to consolidate concrete in Amvic ICF walls should be AVOIDED.

External Consolidation

This method involves attaching a mechanical vibrating device to the outside of the Amvic ICF forms. Although this method may be acceptable, it is not as effective as internal mechanical vibration.

11.9 – Using Concrete Vibrators

11.9.1 – Recommended Specifications

Vibrators consist of a vibrating head connected to a driving motor by a flexible shaft. Inside the head, an unbalanced weight connected to the shaft rotates at high speed, causing the head to revolve in a circular orbit. The motor can be powered by electricity, gasoline, or air. The vibrating head is usually cylindrical with a diameter ranging from ³/₄ to 7 inches (20 to 180 mm). The dimensions of the vibrator head as well as its frequency and amplitude in conjunction with the workability of the mixture affect the performance of a vibrator.





Tapping on the outside of the forms is not an acceptable method of consolidating concrete in Amvic ICF.



Figure 11.7 – Immersion type concrete vibrator with gasoline engine

The table below provides the recommended specifications for concrete vibrators used with Amvic ICF.

Value	4 & 6 inch ICF	8 & 10 inch ICF		
Maximum vibrator head diameter	1 inch (25 mm)	1.25 inch (38 mm)		
Frequency (vibrations per minute)	10000 vpm	9000 vpm		
Minimum Radius of Action	4 inch (100 mm)	6 inch (152 mm)		
Insertion on center spacing	6 inch (152 mm)	9 inch (228 mm)		
Centrifugal Force	220 lbs (100 Kg)	500 lbs (225 Kg)		
	2 - 4 cu.yds / hr	2 to 5 cu.yds / hr		
Compaction rate	(1.5 - 3 m³ / hr)	(1.5 to 3.8 cu. m ³ / hr)		

Table 11.3 – Recommended immersion type concrete vibrator specifications for use with Amvic ICF

11.9.2 – Guidelines for Concrete Consolidation

Recommended Practices:

- Consolidation *MUST* be done immediately after fresh concrete is poured and before it sets.
- Completely immerse vibrator head in concrete during consolidation.
- Insert vibrator vertically and let it sink as **quickly** as possible under its own weight to the desired depth.





Figure 11.8 – Vibrator head placement

- Hold the vibrator 5 to 15 seconds then **slowly** lift up, approximately 3 inches/sec (76 mm/sec) staying behind the trapped air's upward movement.
- Move vibrator and re-insert at a distance 1.5 times the radius of action as shown in diagram below.



Figure 11.9 – Radius of action of concrete vibrator



Figure 11.10 – Insert vibrator head at 1.5 times radius of action



- Allow the vibrator to penetrate 6 inches (152 mm) into the previous layer to ensure proper bond and eliminate cold joints.
- Pour concrete into the walls in lifts of 3-4 ft (915 1.2 m) per hour. For proper consolidation, each of the lifts should be poured in layers of the same thickness as the vibrator head length minus depth of penetration into previous layer, typically 6 inches (152 mm).
- Stop vibration when the surface becomes shiny and there are no more breaking air bubbles.

Practices to Avoid:

- Do not use the vibrator to move concrete laterally. This causes segregation.
- The vibrator head should not touch the sides of the ICF forms. It should only be in contact with concrete.
- Do not immerse the vibrator head down the same path more than once.
- Do not run the vibrator in air for more than 15 seconds. This will cause overheating.
- Avoid sticking the vibrator head into the top of a concrete heap. To flatten a concrete heap, insert the head around the perimeter. Do this carefully to avoid segregation.



Tip

- Ensure the vibrator flexible shaft has enough length to match the wall height being poured.
- Make sure there are enough workers for placing and consolidating concrete during the pour. A two-man crew should be handling the concrete vibrator and immediately following the person working the pump hose as each layer is poured.



11.10 - Finishing the Concrete Pour

If a second storey will be constructed above the height being poured, stop filling the top course of block at least 2 inches below the block top. Vibrate it thoroughly but leave it rough so that the next pour will have a good mechanical bonding surface. An excellent bond will develop by leaving the concrete unfinished.

If this is the final course of block that will be poured, then the concrete should be troweled down smoothly, (recommend the use of a laser level at this point) and anchor bolts should be put into the wet concrete after finishing. We recommend you wet set the anchor bolts into the screeded top of the wall, and install the mudsill after the concrete has set. Mudsills or top plates can either be installed to be full width and extend all of the way to the surface of the blocks (13 inch



It gets very busy towards the end of the pour. Mark anchor bolt locations on the sides of the form before the pour and place them on the scaffolds near where they will be installed.

or 11 inch) or it can be recessed *within* the block cavity so that the EPS foam extends unbroken to the rafter tails.

11.11 – After the Pour: Recheck Wall Straightness and Adjust

After pouring is complete, immediately check the corners again for plumb and the wall for straightness. There is a short window in which the bracing system can push and move the wall. If realignment is required adjust the bracing to do so. Have 3 to 4 spare braces ready in the event you need to quickly install an additional adjustable brace to push the wall in an area that you didn't expect.

11.12 – Preparing for a Blow-out

In the unlikely event of a blow-out, prepare a kit which contains the following:

- A few pieces of OSB or plywood, 24 by 24 inches (600 x 600 mm) or so.
- A container of sheetrock screws.
- A fully charged electric driver drill.
- A portable ladder sufficient to reach whatever height is involved.



Before all pours, brief the crew on how to handle a blow-out. If a blow-out occurs, the ground man should:

- Wave off the pump and vibrator.
- If the foam has only bulged and not separated from the webs, install a piece of form support at the location. Use an extra brace for that purpose.
- If the EPS is broken, remove it, clean out concrete and reinsert the broken piece of EPS so that it is flush with the wall.
- Install one or more pieces of OSB with *multiple* screws into intact webs or bucks on either side of the failure location.



12.1 – Code Requirements

All building codes in the US and Canada require walls below grade to have dampproofing or waterproofing protection.

12.1.1 – Damp-proofing vs Waterproofing

Damp-proof applications will slow or retard water and water vapor penetration through the foundation walls. When applied properly, damp-proofing can keep basements in a dry condition as long as there is no hydrostatic pressure due to ground water table.

Waterproof applications stop water from infiltrating foundation walls. Waterproof applications in most cases are more expensive than damp-proofing. The investment is well worth it considering the repair costs involved, if a basement wall starts to leak water.

12.1.2 – Damp-proofing or Waterproofing According to Building Codes

Damp-proofing is required for foundation walls enclosed within soils where hydrostatic pressure does NOT occur.

If it is determined by a soil investigation report that hydrostatic pressure conditions exist, then the enclosed foundation walls shall be waterproofed. When walls are waterproofed, no damp-proofing is required.

12.1.3 – Foundation / Subsoil drainage system as per Building Codes

Proper drainage of the subsoil is required for all walls which retain soil and enclose habitable space. The drain shall be placed around the perimeter of the foundation wall at or below the footing or SOG level. The drains can be made of drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems. The drains shall discharge water by gravity or mechanical means into an approved drainage system.

Figure 12.1 below illustrates a typical "French Drain" system which has been used successfully for residential construction in North America.





Figure 12.1 – Typical French drain system. ©1993-2006, Tim Carter Image courtesy of Tim Carter, AsktheBuilder.com

12.1.4 – Recommendations for Maintaining a Dry Basement

The following are suggestions to help maintain your basement dry and moisture free:

- Make the extra investment and insist on full waterproofing for your foundation or basement walls. Terminate the waterproofing membrane 2 to 3 inches (50 to 75mm) above grade.
- 2. Build up the ground around your house so that water flows *AWAY* from your basement walls. Also examine sidewalks, patios, decks, and driveways. These can settle over time and cause water to drain back towards your basement walls (See figure 12.2 below).
- 3. Extend downspouts so that water flows away from the structure and does not pool next to the basement walls or basement windows (see figure 12.2 below). If downspouts are connected to the sewer system, disconnect them.





Figure 12.2 – Recommendations for dry basement

12.2 – Damp-proofing & Waterproofing Applications for Amvic ICF

There are 3 types of membranes that can be applied to Amvic ICF including liquid applied membranes, peel & stick membranes and dimple sheets.

Each of the three types has advantages and disadvantages. Before deciding on which one to use, consider the following:

- 1. **Local availability** Check with the local Amvic distributor for appropriate product availability.
- 2. **Product Technical Information** Ensure that product of choice has the proper technical information with regards to specifications, installation instructions and meets the local building code requirements.



Always follow the manufacturer installation procedures for ICF application.

- 3. **Manufacturer warranty** The product manufacturer should have a product warranty against production deficiencies. Some manufacturers offer up to 30 years of warranty on their products.
- 4. **Installer Warranty** The contractor installing the product should offer an installation warranty to guarantee installation and performance for a certain period of time.
- 5. **Installer Experience** It is recommended to ask your installer about his experience using the products available.
- 6. **Price** Higher performance products will almost always cost more. Carefully weigh the benefits against the costs before making a decision on which product to use.



12.3 – Liquid Applied Damp-proofing / Waterproofing systems

Liquid applied membranes usually come in pails of 5 US gallons each. Depending on which product is being used, the membrane can be applied using a trowel, brush, roller or spray.

To protect the liquid applied membrane from sharp/heavy gravel in the backfill soil, Amvic recommends installing protective boards or drainage composites. The protective boards/drainage composites will be applied over the liquid applied membrane and have the added benefits of additional moisture protection and provide air channels for water to be carried by gravity to the footing drain.



Figure 12.3 – Spraying liquid applied membrane on Amvic ICF



Recommended liquid applied membrane products for Amvic ICF include:

- 1. Blue Seal Waterproof Rubber Membrane <u>www.bluesealwaterproofing.com</u>
- 2. BAKOR, Aqua-Bloc® 720-38 www.bakor.com
- 3. Carlisle, BARRICOAT-R <u>www.carlisle-ccw.com</u>
- 4. Epro, Ecoline-R and Ecoline-S <u>www.eproserv.com</u>



Warning!

Liquid applied damp-proofing / waterproofing membranes MUST be water based and free of any solvents. Follow the manufacturer installation requirements.

12.4 – Peel & Stick Damp-proofing / Waterproofing systems

Peel and Stick systems are made of membranes which adhere directly to the EPS on Amvic ICF. One side of the membrane has a thin film of glue which is protected by a paper sheet. Once the paper sheet is peeled off, the membrane is adhered in place as per the specific installation guide of the manufacturer.



Any primer used prior to the peel and stick application MUST be water based and free of any solvents.

In most cases the manufacturer will also recommend a specially formulated primer to be applied to the face of the EPS before applying the membranes which will help improve their adhesion. Peel and stick membranes may require a protection layer against sharp/heavy gravel. Check manufacturer specifications.



Figure 12.4 – Peel and stick waterproofing membrane installed and ready to be backfilled



Recommended peel and stick membrane products for Amvic ICF include:

- 1. SOPREMA, COLPHENE ICF <u>www.soprema.ca</u>
- 2. BAKOR, Blueskin® WP 200 www.bakor.com
- 3. CARISLE, MiraDri 860/861 <u>www.carlisle-ccw.com</u>
- 4. Polyguard, POLYGUARD 650 MEMBRANE <u>www.polyguardproducts.com</u>
- 5. Polyguard, POLYGUARD 650 XT MEMBRANE, for waterproofing AND termite protection <u>www.polyguardproducts.com</u>

12.5 – Dimple sheet Damp-proofing / Waterproofing Systems

Dimple sheet membranes are wrapped around the foundation walls with the dimple side facing the EPS on the Amvic ICF creating an air gap between the back fill soil and the walls. This air gap prevents the build up of direct hydrostatic pressure over the walls and thus moisture in the soil cannot penetrate through to the inside of the basement. When installed properly, dimple sheet membranes have been used with success throughout North America.



Figure 12.5 – Installed dimple sheet membrane



Recommended dimple sheet damp-proofing / waterproofing products for Amvic ICF include:

- 1. Armtec Limited, System Platon <u>www.systemplaton.com</u>
- 2. DMX PLASTICS DMX FlexsheetTM <u>www.dmxplastics.com</u>

12.6 – Parging

Most building codes in North America will require the exterior finish siding to start at a distance not less than 6 to 8 inches (150 to 200 mm) above grade level. The exposed EPS area between the grade and the exterior siding finish must be covered. A parge coat (cementitious coat) is most often used to cover the EPS to protect it from weathering effects.

Before applying the parge coat, the EPS must be clean of any dirt or debris and dry to ensure proper adhesion. Amvic recommends using **Durock Prep-Coat B-2000** with reinforcing fiber mesh or equivalent. The parging coat should overlap the damp-proofing/waterproofing membrane by 2 inches (50 mm).

Steps for applying parge coat:

- 1. Prep the EPS surface.
- 2. Using a trowel, spread a skim coat of the parging material on the EPS.
- 3. Embed the reinforcing mesh into the skim coat while still wet. Allow to cure.
- 4. Apply a second coat of parging and allow to cure.
- 5. The finished surface may be left as is or painted as required for architectural purposes.





13.1 – Interior Drywall

Currently all building codes in North America require foam plastics to be separated from the interior living spaces, any habitable spaces and some crawl spaces by a thermal barrier (fire protection) that will remain in place for 15 minutes based on specific testing criteria.

The most common type of interior finish material that will meet the thermal barrier requirements as stipulated by the building codes is a ¹/₂ inch (12.7mm) gypsum board also known as Drywall[®].

The Amvic ICF polypropylene webs provide a horizontal and vertical furring strip to which the Drywall[®] can be directly attached. The spacing and size of the screws should follow the local building code requirements. Drywall sheets can be installed vertically or horizontally.

For the purpose of meeting the building code requirements regarding Drywall[®] installation, Amvic has conducted the following tests which are available upon request:

- 1. Drywall type "S" fine thread and type "W" coarse thread screw pullout and shear in accordance with **ICBOES AC 116** in conjunction with **ASTM D1761.**
- 2. Room fire test standard in accordance with **UBC-1997** standard **26-3** for protection of interior foam plastics using 1/2 inch (13mm) gypsum board.
- 3. Fire test in accordance with **CAN/ULC S101-04** and **ASTM E119-00a** "Standard test methods for fire tests of building construction and materials using 1/2 inch (12.7mm) gypsum board.

13.2 – Traditional Stucco (Exterior)

Stucco is a cement based wall cladding system that can be used as an exterior or interior finish. Traditionally stucco is applied over wood stud with sheathing, cast in place concrete or masonry substrates. Modern stucco applications have advanced and adapted to other substrate materials including Amvic ICF.

Stucco cladding for insulating concrete forms is mainly composed of metal wire lathe, a base coat and a finish coat. The metal wire lathe is attached to the Amvic propylene webs using approved drywall fine thread or coarse thread screws.





Figure 13.1 – Typical Stucco Application over ICF

Currently there are two main types of stucco used in North America:

Three Coat Stucco

The stucco base itself is applied in two coats and followed by a third coat. Each of the two base coats is typically 3/8 inch (10 mm) thick resulting in a finish stucco base of 3/4 inch (20 mm).

The first base coat is known as scratch coat. This coat keys into the metal wire lathe, covering it completely. Horizontal and vertical grooves are introduced in this coat as it cures. The grooves will provide a good gripping surface for the coat to follow.

The second base coat is known as the brown coat. It is keyed into the grooves in the scratch coat and is often smoothed in preparation for the final coat.

One-Coat Stucco

The stucco base is applied in a single coat or 3/8 - 5/8 inch (10 – 16 mm) thick. A finish coat is then applied.





Important Notes!

- 1. When applying stucco cladding, always follow the manufacturer's installation and/or technical instructions.
- 2. Check manufacturer details for sealing windows and doors to ensure moisture and seepage control.
- 3. Check local building having jurisdiction for the following:
 - a. Use of weather resistive barrier before applying wire metal lathe, and
 - b. Compliance with any other specific requirements related to stucco applications.

Stucco finish coats can have a variety of textures and colors and generally produce a pleasing look.



Figure 13.2 – Stucco Finish



13.3 – EIFS (Exterior Insulation & Finish System)

EIFS (also known as synthetic stucco) is a multi-component exterior finish for walls. The system has traditionally been installed over wood frame substrates with appropriate sheathing. Some EIFS manufacturers have changed the name of their products to distinguish it for ICF application e.g. Dryvit[®] EIFS products for ICF has changed to TAFS (Textured Acrylic Finishing System)

The typical EIFS cladding system consists of:

- 1. Foam Insulation Layer
- 2. A polymer base coat
- 3. Fiber mesh reinforcing layer embedded in the polymer base
- 4. Acrylic, Textured finish coat



Figure 13.3 – Typical EIFS installation over ICF

The EPS that makes up the Amvic ICF panels is a suitable substrate for applying EIFS cladding directly without the need for an additional foam board.





Important Notes!

- 1. When applying EIFS cladding, always follow the manufacturer installation instructions and inspection guidelines for proper installation.
- 2. Check manufacturer details for sealing window and doors to ensure moisture seepage control.
- 3. Check local building code and ensure compliance with any requirements regarding EIFS applications.

EIFS wall claddings, like stucco, have many textures and colors that can be applied to the finish acrylic coat to produce the desired architectural effect.



Figure 13.4 – EIFS finish



13.4 - Anchored Masonry Veneer

Masonry or brick veneer can be applied to Amvic ICF wall in the same manner as regular wood frame or steel stud construction. A ledge support is required to carry the masonry veneer gravity loads (**Please refer to part 9.5 of the manual**). The masonry veneer ties shall be screwed directly to the Amvic polypropylene webs using approved fine thread or coarse thread screws. The horizontal and vertical spacing of the masonry veneer ties shall comply with engineering and/or local building requirements. Amvic has retained a consulting engineering firm to prepare an engineering analysis report on masonry veneer ties under different wind and seismic load conditions. A copy of the report is available upon request and can also be downloaded from our website. (Amvic Masonry Ties Structural Report.)



Figure 13.5 – Brick veneer construction on Amvic ICF



Follow the standard building code requirements for:

- a. Weep holes.
- b. Flashing with dripping edge.
- c. Proper material specifications for anchored masonry veneer ties.



13.5 – Wood, Vinyl, and Fiber Cement Siding

Amvic ICF can also be finished with exterior siding planks such as wood, vinyl and fiber cement.

For wood and fiber cement siding products, wood or metal strapping will have to be installed on the Amvic EPS surface by screwing directly to the block propylene webs. The wood or fiber cement siding can then be installed over the strapping using approved nails or screws.

Vinyl siding in most cases can be installed by directly screwing into the Amvic ICF propylene webs with no furring straps.





Check local building code requirements for use of weather resistive barrier before installing wood, vinyl or fiber cement sidings over Amvic ICF.





Appendix A – Steel Reinforcement for Wall Openings

A1.0 - Reinforcing Steel for wall opening sides and Sill

Steel reinforcing bars is required for wall openings in reinforced concrete ICF walls around the sides and sill (bottom of opening) for windows. Diagonal reinforcing steel is also required at the corners of the wall openings. The main purpose of this reinforcing steel is to resist cracks in concrete due to shrinkage and temperature. Figures A1.1 and A1.2 below illustrates the placement of reinforcing steel accordingly;



Figure A1.1 – Reinforcing steel for wall opening sides and sill





Figure A1.2 – Diagonal reinforcing steel for wall openings

A1.1 - Lintels (Door and Window Headers)

Lintels are considered as beams that span over window or door openings. Lintels require special reinforcing details to satisfy engineering practices / local code requirements. Diagram A1.3 & A1.4 below illustrate typical lintel reinforcing steel placement;



Figure A1.3 – Reinforcing steel for lintels





CROSS SECTION A Figure A1.4 – Typical lintel cross sections

Lintel top and bottom reinforcement must extend the proper development length beyond the face of the opening and is indicated as (W) on the figure. The minimum development length depends on many factors. As a rule of thumb the minimum development length should be not less than 40 times the bar diameter and the minimum required should not be less than 24 inches in order to use the Amvic lintel charts. Table A1.1 gives the minimum (W) for the different reinforcing bars used in the charts.

If the wall opening is near the end of wall length and there is not enough space left for proper development length then the lintel reinforcing bars should be bent around the corner at 90° into the adjacent perpendicular wall.

Rebar Designation	Development Length (W)	
Consider		
Ganadian		
10M	609 mm (24 in)	
15M	640 mm (25 in)	
20M	780 mm (30.7 in)	
25M	1008 mm (39.7 in)	
30M	1196 mm (47 in)	
United States		
#3	24 in	
#4	24 in	
#5	25 in	
#6	30 in	
#8	40 in	
#9	45 in	

Table A1.1 - Minimum Development Length (W) For Lintel Top & Bottom reinforcing Bars

Amvic has prepared lintel charts as a guideline for reinforcing steel requirements for different loading conditions and spans. The following tables A1.2 and A1.3 represent the limitations and assumptions that were used in developing the lintel charts for Canada and the United States respectively.

Item	Description	Limit
General	Number of stories	2 above grade
	Maximum Storey Height	3.66 metres (12 feet)
	Maximum Floor Clear Span	12 metres (40 feet)
	Maximum Roof Clear Span	12.6 metres (42 feet)
Dead Loads *	Floor	0.7 Kpa (15 psf)
	Partitions	0.5 Kpa (10 psf)
	Roof	0.7 Kpa (15 psf)
	Concrete Density	24 KN/m2 (150 pcf)
Live Loads *	Main Floor	1.9 Kpa (40 psf)
	Second Floor	1.4 Kpa (30 psf)
	Attic	1.0 Kpa (20 psf)
	Ground Snow Load	1.5 Kpa (30 psf)
		2.5 Kpa (50 psf)
		3.5 Kpa (70 psf)
Material Properties	Concrete F'C	20 Mpa (2900 psi)
	Steel Fy	400 Mpa (60,000 psi)

*All loads given in table A1 & A2 are service loads i.e. not factored

Table A1.2 - Limitations for Canadian Lintel Charts



Item	Description	Limit
General	Number of stories	2 above grade
	Maximum Storey Height	12 feet
	Maximum Floor Clear Span	40 feet
	Maximum Roof Clear Span	42 feet
Dead Loads *	Floor	15 psf
	Partitions	10 psf
	Roof	15 psf
	Concrete Density	150 pcf
Live Loads *	Main Floor	40 psf
	Second Floor	30 psf
	Attic	20 psf
	Ground Snow Load	30 psf
		50 psf
		70 psf
Material Properties	Concrete F'C	3000 psi
	Steel Fy	60,000 psi

*All loads given in table A1 & A2 are service loads i.e. not factored

Table A1.3 - Limitations for United States Lintel Charts

A1.2 - Structural Assumptions;

The following is a list of assumptions used in the development of the Canadian and US Lintel charts;

- 1. Concrete compressive strength at 28 days F'c = 20 Mpa (3000 psi).
- 2. Steel reinforcing bars yield strength Fy = 400 Mpa (60 ksi).
- 3. Lintels are considered as single span beams with fixed ends due to the fact that the walls and lintels are monolithically cast.
- 4. All loads on the lintels are assumed as uniformly distributed loads. No concentrated loads from girders or trusses were considered.
- 5. Maximum reinforcing bar size used is 30M for Canada or #9 for the US.
- 6. Maximum number of bars for top or bottom of lintels is 2. No bundled bars were considered.
- 7. When the chart identifies a single reinforcing re-bar (e.g. 1-15M or 1-#5) for top or bottom, a single C-stirrup should be used as per the charts. If however double reinforcing bars for either top or bottom of lintel is identified (e.g. 2-15M or 2-#5) then a double C-stirrup MUST be used.



- 8. Never exchange a double reinforcing bars configuration for a single larger size bar (e.g. don't use 1-15M or 1-#5 instead of 2-10M or 2-#4 respectively).
- 9. The Canadian lintel charts are based on CSA A23.3-94.
- 10. The US lintel charts are based on ACI 318-02.



Tables for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof

Canada

MLL 4x10	MLL 6x10	MLL 8x10	MLL 10x10
MLL 4x12	MLL 6x12	MLL 8x12	MLL 10x12
MLL 4x16	MLL 6x16	MLL 8x16	MLL 10x16
MLL 4x20	MLL 6x20	MLL 8x20	MLL 10x20
MLL 4x24	MLL 6x24	MLL 8x24	MLL 10x24





Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls									
Span	load	Uniform Load			Garry	Linte	l Span - Metres	(feet)	C I Taine 1100	•		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	25.4	1-10M top	1-10M top	1-10M top	1-10M top						
(10 feet)	(30 psf)	(1738.1)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.						
	0.5 1/10	00.7	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	2.0 Kµa (50 nef)	(2034.2)	1-10M hot	1-10W top	1-10M bot	1-10W top						
	(00 p31)	(2004.2)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	34.0	1-10M top	1-10M top	1-10M top							
	(70 psf)	(2330.3)	1-10M bot.	1-10M bot.	1-10M bot.							
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"							
4.5 metres	1.5 Kpa	33.8	1-10M top	1-10M top	1-10M top							
(15 feet)	(30 pst)	(2314.0)	1-10M bot.	1-10M bot.	1-10M bot.							
	2.5 Kna	39.9	1-10M ton	1-10M ton	10101 @ 5.5							
	(50 psf)	(2733.5)	1-10M bot.	1-10M bot.								
	(····)	(,	10M @ 5.5"	10M @ 5.5"								
	3.5 Kpa	46.0	1-10M top	1-10M top								
	(70 psf)	(3152.9)	1-10M bot.	1-10M bot.								
	4.5.16	10.0	10M @ 5.5"	10M @ 5.5"								
6.0 metres	1.5 Kpa (20 pcf)	43.b (2001.2)	1-10IVI TOP	1-10W top 1 10M bot								
(20 1661)	(00 h2i)	(2001.0)	10M @ 5.5"	10M @ 5.5"								
	2.5 Kpa	51.6	1-10M top	1011 8 0.0								
	(50 psf)	(3534.1)	1-10M bot.									
			10M @ 5.5"									
	3.5 Kpa	59.5	1-10M top									
	(70 psf)	(4076.9)	1-10M bot.									
7.5 metres	1.5 Kna	53.3	10M @ 5.5 1-10M top									
(25 feet)	(30 psf)	(3653.2)	1-10M bot.									
()	(** [***)	(******)	10M @ 5.5"									
	2.5 Kpa	62.9	1-10M top									
	(50 psf)	(4311.2)	1-10M bot.									
	0.5.1/	70.5	10M @ 5.5"									
	3.5 Kpa (70 nef)	(72.5										
	(70 psi)	(4303.2)										
9 metres	1.5 Kpa	66.5	1-10M top									
(30 feet)	(30 psf)	(4556.2)	1-10M bot.									
			10M @ 5.5"									
	2.5 Kpa	78.5										
	(50 pst)	(53/8./)										
	3.5 Kpa	90.5										
	(70 psf)	(6201.2)										
10.5 metres	1.5 Kpa	73.3										
(35 feet)	(30 psf)	(5023.0)										
	0.5.Kno	2.20										
	2.0 Kpa (50 nsf)	(5936.0)										
	(00 poi)	(0000.0)										
	3.5 Kpa	99.9										
	(70 psf)	(6849.0)										
10	4.5.4	00.0										
12 metres	1.5 Kpa	83.2										
(40 TEET)	(JU PST)	(0700.3)										
	2.5 Kpa	98.3										
	(50 psf)	(6736.6)										
	3.5 Kpa	113.4										
	(70 psf)	(7773.0)										



24[°] (610mm)

553mm



Legend 1-10M top = top rebar 1-10M bot.= bottom rebar 10M @ 5.5~ = use 10M stirrups @ 5.5~ 0/C

* check applicability limits table A1.2 in appendix A to use this chart

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load				Linte	l Span - Metres	(feet)						
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)			
3 metres	1.5 Kpa	25.5	1-10M top	1-10M top	1-10M top	1-10M top	1-10M top	1-10M top						
(10 feet)	(30 psf)	(1748.6)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"						
	2.5 Kpa	29.8	1-10M top	1-10M top	1-10M top	1-10M top	1-10M top							
	(50 psf)	(2044.7)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.							
	0.5.1/		10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
	3.5 Kpa	34.2	1-10M top	1-10M top	1-10M top	1-15M top								
	(70 pst)	(2340.8)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.								
4.5 meters	1 E V	00.0	10M@7	10M@7	10M@7	10M @ /								
4.5 metres	1.5 Kpa	33.9	1-1010 top	1-10W top	1-10W top	1-10W top								
(15 leet)	(au hai)	(2324.3)	1-10W DUL.	1-TUIVI DUL.	1-10W DOL.	1-10W 00L								
	2.5.Kpg	40.0	1 10M top	1 10M top	1 10M top	TUNIWI								
	(50 nef)	(2744.0)	1-10M hot	1-10M bot	1-10M bot									
	(50 psi)	(2744.0)	10M @ 7"	10M @ 7"	10M @ 7"									
	3 5 Kna	46.2	1-10M ton	1-10M ton	1-15M ton									
	(70 nsf)	(3163.4)	1-10M hot	1-10M bot	1-15M bot									
	(10 poi)	(010011)	10M @ 7"	10M @ 7"	10M @ 7"									
6.0 metres	1.5 Kpa	43.8	1-10M top	1-10M top	1-15M top									
(20 feet)	(30 psf)	(3001.7)	1-10M bot.	1-10M bot.	1-15M bot.									
(• • • •)	(····/	()	10M @ 7"	10M @ 7"	10M @ 7"									
	2.5 Kpa	51.7	1-10M top	1-10M top										
	(50 psf)	(3544.6)	1-10M bot.	1-10M bot.										
			10M @ 7"	10M @ 7"										
	3.5 Kpa	59.6	1-10M top	1-10M top										
	(70 psf)	(4087.4)	1-10M bot.	1-10M bot.										
			10M @ 7"	10M @ 7"										
7.5 metres	1.5 Kpa	53.5	1-10M top	1-10M top										
(25 feet)	(30 psf)	(3663.7)	1-10M bot.	1-10M bot.										
			10M @ 7"	10M @ 7"										
	2.5 Kpa	63.1	1-10M top	1-10M top										
	(50 psf)	(4321.7)	1-10M bot.	1-10M bot.										
	0.5.1/	70.7	10M @ 7"	10M @ 7"										
	3.5 Kpa	(4070.0)	1-10IVI top											
	(70 psi)	(4979.0)	1-10W DUL.											
0 metrec	1.5 Kna	66.6	1-10M top											
(30 feet)	(30 nef)	(4566.7)	1-10M hot											
(001001)	(00 p3i)	(4000.7)	10M @ 7"											
	2.5 Kpa	78.6	1-10M top											
	(50 psf)	(5389.2)	1-10M bot.											
	(()	10M @ 7"											
	3.5 Kpa	90.6	1-10M top											
	(70 psf)	(6211.7)	1-10M bot.											
			10M @ 7"											
10.5 metres	1.5 Kpa	73.4	1-10M top											
(35 feet)	(30 psf)	(5033.5)	1-10M bot.											
			10M @ 7"											
	2.5 Kpa	86.8	1-10M top											
	(50 psf)	(5946.5)	1-10M bot.											
	0.5.1/	100.1	10M @ 7"											
	3.5 Kpa	100.1												
	(/U pst)	(0009.4)												
12 matrac	15 Kno	85.5	1-10M ton											
(40 faat)	(30 nef)	(5710.8)	1-10M hot											
(10 1001)	(oo hai)	(57 10.0)	10M @ 7"											
	2.5 Kna	98.4	1011/01											
	(50 nsf)	(6747.1)												
	(poi)	()												
	3.5 Kpa	113.6												
	(70 psf)	(7783.4)												



4″ (102mm)



Lintel Width = 4" (102 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) **Legend** 1-10M top = top rebar 1-10M bot.= bottom rebar 10M @ 7" = use 10M stirrups @ 7" 0/C

* check applicability limits table A1.2 in appendix A to use this chart

Elear Clear	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls									
Span	load	Uniform Load		Garryi	ng second s Linte	l Span - Metres	(feet)	L Frame Roo	•			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	25.8	1-10M top	1-10M top	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	1-15M top	1-20M top	
(10 feet)	(30 psf)	(1769.4)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	
	0.5 //	00.1	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	
	2.5 Kpa (50 pcf)	30.1 (2065 5)	1-TUIVI top	1-TUIVI top	1-TUIVI top	1-TUM top	1-TUIVI TOP	1-15W top	1-15W top	1-20M top		
	(50 þsi)	(2005.5)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	3.5 Kpa	34.5	1-10M top	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	1-15M top	Tom o the		
	(70 psf)	(2361.5)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	1-15M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
4.5 metres	1.5 Kpa	34.2	1-10M top	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	1-15M top			
(15 feet)	(30 psf)	(2345.3)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	1-15M bot.			
	2.5 Kng	40.3	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5			
	(50 nsf)	(2764 7)	1-10M hot	1-10M hot	1-10M bot	1-10M hot	1-15M bot	1-15M hot				
	(00 poi)	(210111)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
	3.5 Kpa	46.5	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top					
	(70 psf)	(3184.2)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
6.0 metres	1.5 Kpa	44.1	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top					
(20 feet)	(30 psr)	(3022.5)	1-TUIVEDOL. 10M @ 9.5"	1-10WI DOL. 10M @ 9.5"	1-10WI DOL. 10M @ 0.5"	1-15M DUL 10M @ 0.5″	1-15WI DUL 10M @ 0.5"					
	2.5 Kna	52.0	1-10M ton	1-10M ton	1-10M ton	1-15M top	10141 @ 9.5					
	(50 psf)	(3565.4)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.						
	(. ,	. ,	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	3.5 Kpa	59.9	1-10M top	1-10M top	1-10M top							
	(70 psf)	(4108.2)	1-10M bot.	1-10M bot.	1-10M bot.							
7.5 meters	1.5.1/	50.0	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	4.4534.444						
7.5 metres (25 feet)	1.5 Kpa (20 pcf)	53.8 (2694 4)	1-10IVI TOP	1-10W top	1-10W top	1-15M top 1.15M bot						
(20 1661)	(50 psi)	(3004.4)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	2.5 Kpa	63.4	1-10M top	1-10M top	1-15M top							
	(50 psf)	(4342.4)	1-10M bot.	1-10M bot.	1-15M bot.							
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	3.5 Kpa	73.0	1-10M top	1-10M top	1-15M top							
	(70 pst)	(5000.4)	1-10M bot.	1-10M bot.	1-15M bot.							
9 metres	1.5 Kna	66.9	1-10M ton	1-10M ton	1-15M ton							
(30 feet)	(30 psf)	(4587.5)	1-10M bot.	1-10M bot.	1-15M bot.							
(,	(····/	(10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	2.5 Kpa	78.9	1-10M top	1-10M top								
	(50 psf)	(5409.9)	1-10M bot.	1-10M bot.								
	0.5 //	00.0	10M @ 9.5"	10M @ 9.5"								
	3.5 Kpa (70 pcf)	90.9	1-10W top	1-10W top								
	(10 psi)	(0232.4)	10M @ 9.5"	10M @ 9.5"								
10.5 metres	1.5 Kpa	73.7	1-10M top	1-10M top	1-15M top							
(35 feet)	(30 psf)	(5054.3)	1-10M bot.	1-10M bot.	1-15M bot.							
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	2.5 Kpa	87.1	1-10M top	1-10M top								
	(50 pst)	(5967.3)	1-10M DOT.	1-10M DOT.								
	3.5 Kna	100.4	1-10M ton	1-10M ton								
	(70 psf)	(6880.2)	1-10M bot.	1-10M bot.								
	х F · 7	· · · · /	10M @ 9.5"	10M @ 9.5"								
12 metres	1.5 Kpa	83.6	1-10M top	1-10M top								
(40 feet)	(30 psf)	(5731.6)	1-10M bot.	1-10M bot.								
	0.5.1/	00.7	10M @ 9.5"	10M @ 9.5"								
	2.0 Kpa (50 nsf)	98./ (6767.0)	1-10M bot	1-15M hot								
	(on hei)	(0101.9)	10M @ 9.5"	10M @ 9.5"								
	3.5 Kpa	113.9	1-10M top	10111 0 010								
	(70 psf)	(7804.2)	1-10M bot.									
			10M @ 9.5"									



Lintel Width = 4" (102 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-10M top = top rebar 1-10M bot.= bottom rebar 10M @ 9.5" = use 10M stirrups @ 9.5" O/C

* check applicability limits table A1.2 in appendix A to use this chart

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls								
Snan	load	Uniform I oad			Carry	ng second s Linte	l Snan - Metres	(feet)	L Frame Roo	1	
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	26.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
(10 feet)	(30 psf)	(1790.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
			no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"
	2.5 Kpa	30.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
	(50 psf)	(2086.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
	2 E Kaa	24.0	no stirrups	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12
	3.3 Kµa (70 pcf)	04.0 (2382.0)	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15M bot	1-15W top	1-15W top	1-15W bot	1-20101 t0p
	(70 psi)	(2002.5)	no stirruns	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"
4.5 metres	1.5 Kpa	34.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top
(15 feet)	(30 psf)	(2366.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.
. ,	,	. ,	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"
	2.5 Kpa	40.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
	(50 psf)	(2786.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"
	3.5 Kpa	46.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top
	(70 psf)	(3205.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.
C 0 matros	1 E Kaa	44.4	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 6	10M @ 6
(20 feet)	1.0 Kµa (30 ncf)	44.4	1-15W top	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15W top	1-20101 t0p	1-20101 t0p
(20 1661)	(50 psi)	(3043.3)	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"
	2.5 Kpa	52.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top
	(50 psf)	(3586.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.
	/	· · /	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"
	3.5 Kpa	60.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top
	(70 psf)	(4129.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
7.5 metres	1.5 Kpa	54.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top
(25 feet)	(30 psf)	(3705.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.
	0 E Kaa	60.7	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 6	10M @ 6	10M @ 6
	2.0 Kµa (50 ncf)	(1363.8)	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15M bot	1-20101 t0p	1-20101 t0p	1-25W bot	1-25M hot
	(50 psi)	(4000.0)	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
	3.5 Kpa	73.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top
	(70 psf)	(5021.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6.25"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
9 metres	1.5 Kpa	67.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top
(30 feet)	(30 psf)	(4608.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.
		70.0	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6.25"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
	2.5 Kpa	/9.2	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top	1-30M top
	(ou psi)	(5431.3)	1-15IVI DOL.	1-15W DOL 10M @ 12"	1-15W DOL 10M @ 12"	1-15IVI DOL.	1-20101 DOL.	1-20₩ DOL.	1-25WI DOL 10M @ 6"	1-25IVI DOL.	1-30W DOL. 10M @ 6″
	3.5 Kna	91.2	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-20M ton	1-25M ton	1-25M ton	1-30M ton	TOWN & D
	(70 psf)	(6253.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
	X · F· /	(10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6.25"	10M @ 6"	10M @ 6"	10M @ 6"	
10.5 metres	1.5 Kpa	74.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top
(35 feet)	(30 psf)	(5075.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12.5"	10M @ 6.25"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
	2.5 Kpa	87.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top	
	(50 psf)	(5988.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
	2.5 Kpg	100.7	10M @ 12	10W @ 12	10W @ 12	10M @ b	10M @ 6.25	10M @ b	10M @ b	10M @ b	
	(70 nsf)	(6901.6)	1-15M top	1-15M hot	1-15M hot	1-15M hot	1-20M hot	1-25M hot	1-25M hot	1-30M hot	
	(10 hai)	(0001.0)	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6.25"	10M @ 6"	10M @ 6"	10M @ 6"	
12 metres	1.5 Kpa	83.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-30M top	1-30M top
(40 feet)	(30 psf)	(5752.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-30M bot.	1-30M bot.
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
	2.5 Kpa	99.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top	
	(50 psf)	(6789.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
	0.5.11	44.0	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	
	3.5 Kpa	114.2	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top		
	(ru psi)	(1020.0)	1-1010 DOL 1010 @ 10"	1-10W DOL 10M @ 10"	100 MCT-1	1-2010 DOL. 10M @ 6"	1-2010 DOL 10M @ 6"	1-20WI DOL.	1-30WI DOL.		
				1011/1 1/2	10111 @ 0		10101 @ 0	10101 10 10			





Lintel Width = 4" (102 mm) Lintel Depth = 20 (208 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 12" = use 10M stirrups @ 12" 0/C

 * check applicability limits table A1.2 in appendix A to use this chart

Eloor Clear	Ground snow	Total Eactored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls f	
Span	load	Uniform Load			Garryi	Linte	l Span - Metres	(feet)	L Frame Roo	•	
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)
3 metres	1.5 Kpa	26.1	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top	1-30M top
(10 feet)	(30 psf)	(1790.7)	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.	1-30M bot.
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"
	2.5 Kpa	30.4	1-20M top	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top		
	(50 pst)	(2086.8)	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.		
	3.5 Kna	3/1.8	1-20M top	1.25M top	1.25M top	1.25M top	1-30M top	1-30M top	TUM @ 6		
	(70 nsf)	(2382.9)	1-20M top	1-25M hot	1-25M hot	1-25M hot	1-30M hot	1-30M hot			
	(10 p31)	(2002.3)	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"			
4.5 metres	1.5 Kpa	34.5	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top			
(15 feet)	(30 psf)	(2366.6)	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.			
			10M @ 12"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"			
	2.5 Kpa	40.6	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top				
	(50 psf)	(2786.1)	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.				
			10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"				
	3.5 Kpa	46.8	1-25M top	1-25M top	1-30M top	1-30M top					
	(70 pst)	(3205.6)	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.					
6.0 metree	1 E Kaa	44.4	1 0EM top	10M @ b	10M @ b	10M @ b					
(20 feet)	(30 pcf)	(20/3 0)	1-25M hot	1-25W top	1-30M bot	1-30M bot					
(20 1661)	(50 psi)	(3043.3)	10M @ 6"	10M @ 6"	10M @ 6"	10M @ 6"					
	2.5 Kpa	52.3	1-25M top	1-30M top	1-30M top	1011 8 0					
	(50 psf)	(3586.7)	1-25M bot.	1-30M bot.	1-30M bot.						
	/	· · /	10M @ 6"	10M @ 6"	10M @ 6"						
	3.5 Kpa	60.3	1-30M top	1-30M top							
	(70 psf)	(4129.6)	1-30M bot.	1-30M bot.							
			10M @ 6"	10M @ 6"							
7.5 metres	1.5 Kpa	54.1	1-25M top	1-30M top							
(25 feet)	(30 psf)	(3705.8)	1-25M bot.	1-30M bot.							
	0 E Kaa	60.7	10M @ 6	10M @ 6							
	2.0 Kµa (50 pcf)	(0 \$20)	1-30W lop								
	(50 hsi)	(4303.0)	1-30W DOL 10M @ 6"								
	3.5 Kpa	73.3	1-30M top								
	(70 psf)	(5021.8)	1-30M bot.								
	/	. ,	10M @ 6"								
9 metres	1.5 Kpa	67.2	1-30M top								
(30 feet)	(30 psf)	(4608.8)	1-30M bot.								
			10M @ 6"								
	2.5 Kpa	79.2									
	(50 pst)	(5431.3)									
	2 E Kaa	01.0									
	(70 nsf)	(6253.8)									
	(70 psi)	(0233.0)									
10.5 metres	1.5 Kpa	74.1									
(35 feet)	(30 psf)	(5075.7)									
	2.5 Kpa	87.4									
	(50 psf)	(5988.6)									
		100.7									
	3.5 Kpa	100.7									
	(70 pst)	(0901.p)									
12 metres	1.5 Kna	83.0									
(40 feet)	(30 nsf)	(5752.9)									
(101000)	(00 poi)	(0.02.0)									
	2.5 Kpa	99.1									
	(50 psf)	(6789.3)									
	3.5 Kpa	114.2									
	(70 psf)	(7825.6)									





Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 12" = use 10M stirrups @ 12" 0/C

 * check applicability limits table A1.2 in appendix A to use this chart

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls								
Snan	load	Uniform I oad			Carry	linte	Span - Metres	(feet)			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	26.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
10 feet)	(30 psf)	(1811.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	30.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
	(50 psf)	(2107.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
	2 E Kno	05.1	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15
	3.3 Kµa (70 pcf)	(2403.5)	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15W top	1-15M bot	1-15W top
	(70 psi)	(2403.3)	no stirrups	no stirruns	no stirrups	10M @ 15"	1-15W DOL 10M @ 15"	10M @ 15"	10M @ 15"	1-TJW DOL 10M @ 15"	10M @ 15"
4.5 metres	1.5 Kpa	34.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
(15 feet)	(30 psf)	(2387.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
	,	· · · /	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	40.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top
	(50 psf)	(2806.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	3.5 Kpa	47.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top
	(70 psf)	(3226.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.
C 0 matros	1 E Vpa	44.7	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15
(20 feet)	1.0 Kµa (30 ncf)	44.7	1-15W top	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15W top	1-15M bot	1-20101 top 1-20101 bot
(20 1661)	(50 psi)	(5004.5)	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	52.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
	(50 psf)	(3607.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
	,	· · /	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"
	3.5 Kpa	60.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top
	(70 psf)	(4150.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"
7.5 metres	1.5 Kpa	54.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
(25 feet)	(30 psf)	(3726.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
	0 E Kno	64.0	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 7.5	10M @ 7.5
	2.0 Kµa (50 nef)	04.0 (A384 A)	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-20101 t0p	1-2010 top	1-25M hot
	(50 psi)	(4004.4)	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	3.5 Kpa	73.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top
	(70 psf)	(5042.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.
	,	· · /	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
9 metres	1.5 Kpa	67.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top
(30 feet)	(30 psf)	(4629.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	79.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top
	(50 pst)	(5451.9)	1-15W DOT.	1-15M DOL	1-15M DOT.	1-15IVI DOL.	1-15M DOT.	1-2010 DOT.	1-2010 DOT.	1-15IVI DOT.	1-25WI DOT.
	3.5 Kna	01.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1.25M ton	1-30M ton
	(70 nsf)	(6274 4)	1-15M hot	1-15M bot	1-15M bot	1-15M bot	1-15M hot	1-20M hot	1-25M hot	1-25M hot	1-30M hot
	(10 poi)	(027)	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
10.5 metres	1.5 Kpa	74.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top
(35 feet)	(30 psf)	(5096.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	87.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top
	(50 psf)	(6009.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.
	0.5.1/22	101.0	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	3.5 Kpa (70 pof)	0.101	1-15M top	1-15M bot	1-15M bot	1-15M bot	1-20M top	1-2014 top	1-25M top	1-2011 t0p	1-SUIVI LOP
	(70 psi)	(0922.2)	no stirrune	10M @ 15"	1°15₩ DUL 10M @ 15″	1°15WLDUL 10M @ 15″	1-2010 DUL 10M @ 7.5"	1-2010 DUL 10M @ 7.5"	1-2010 DUL 10M @ 7.5"	1-251VI DUL. 10M @ 7.5"	1-30WI DUL 10M @ 7.5"
12 metres	1.5 Kna	84.2	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M ton	1-20M ton	1-25M top	1-25M ton	1-30M ton
(40 feet)	(30 psf)	(5773.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.
(· ·····/	(··· F=·)	(, , , , , , ,	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	99.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top	
	(50 psf)	(6809.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	
	3.5 Kpa	114.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top		
	(70 psf)	(7846.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot		
1			10M @ 15	1UM @ 15	1UM @ 15	10M @ 7.5	10M @ 7.5	10M @ 7.5	10M @ 7.5		





Lintel Width = 4" (102 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 15" = use 10M stirrups @ 15" 0/C

 * check applicability limits table A1.2 in appendix A to use this chart
| Image: transmission of the section | Elear Clear | Ground onow | Total Eastarad | | | Minim | um Reinforc | ement for Li | ntels in Load | Bearing Wa | lls | |
|--|---------------|---------------------|----------------|--------------------------|---------------------------|-------------------------|-------------------------|-----------------|---------------|-------------------------|-------------------------|---------------|
| entered bySolar (a)Solar (b)Solar (b) <th>Snan</th> <th>load</th> <th>Uniform I oad</th> <th></th> <th></th> <th>Garryi</th> <th>ng second s
Linte</th> <th>l Snan - Metres</th> <th>(feet)</th> <th>L Frame Roo</th> <th>•</th> <th></th> | Snan | load | Uniform I oad | | | Garryi | ng second s
Linte | l Snan - Metres | (feet) | L Frame Roo | • | |
| 3 arter 1.5 kg 1.5 kg <th1.5 kg<="" th=""> <th1.5 kg<="" th=""> 1.5 kg<!--</th--><th>metres (feet)</th><th>Kpa (psf)</th><th>KN/m (lbs/ft)</th><th>3.6 m (12 ft)</th><th>3.9 m (13 ft)</th><th>4.2 m (14 ft)</th><th>4.5 m (15 ft)</th><th>4.8 m (16 ft)</th><th>5.1 m (17 ft)</th><th>5.4 m (18 ft)</th><th>5.7 m (19 ft)</th><th>6.0 m (20 ft)</th></th1.5></th1.5> | metres (feet) | Kpa (psf) | KN/m (lbs/ft) | 3.6 m (12 ft) | 3.9 m (13 ft) | 4.2 m (14 ft) | 4.5 m (15 ft) | 4.8 m (16 ft) | 5.1 m (17 ft) | 5.4 m (18 ft) | 5.7 m (19 ft) | 6.0 m (20 ft) |
| Image: bit | 3 metres | 1.5 Kpa | 26.4 | 1-15M top | 1-15M top | 1-20M top | 1-20M top | 1-20M top | 1-25M top | 1-25M top | 1-25M top | 1-25M top |
| Image: state | (10 feet) | (30 psf) | (1811.3) | 1-15M bot. | 1-15M bot. | 1-20M bot. | 1-20M bot. | 1-20M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. |
| 2.5 % 30.7 1.5 Mine 1.2 Mine 1. | | | | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 7.5" | 10M @ 7.5" |
| [0] [0] [n] [0] | | 2.5 Kpa | 30.7 | 1-15M top | 1-20M top | 1-20M top | 1-25M top | 1-25M top | 1-25M top | 1-25M top | 1-30M top | 1-30M top |
| $ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | (50 psf) | (2107.4) | 1-15M bot. | 1-20M bot. | 1-20M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. |
| 33 kg / kg | | | | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 15" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" |
| (10 ph) (2015) (2010) (1200) | | 3.5 Kpa | 35.1 | 1-20M top | 1-20M top | 1-25M top | 1-25M top | 1-25M top | 1-25M top | 1-30M top | 1-30M top | |
| Sheet Sheet <th< td=""><td></td><td>(70 psf)</td><td>(2403.5)</td><td>1-20M bot.</td><td>1-20M bot.</td><td>1-25M bot.</td><td>1-25M bot.</td><td>1-25M bot.</td><td>1-25M bot.</td><td>1-30M bot.</td><td>1-30M bot.</td><td></td></th<> | | (70 psf) | (2403.5) | 1-20M bot. | 1-20M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. | |
| -5.5 metry
(5) feet
(5) feet
(5) feet
(6) eff) -7.6 mb (6)
(7.0 mb) -7.6 mb (7)
(7.0 mb) 7.6 mb (7)
(7.0 mb) | 4.5 metres | 1 E V | 04.0 | 10M @ 15 | 10M @ 15 | 10M @ 15 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | |
| (1) Here (20) Here <t< td=""><td>4.5 metres</td><td>1.5 Kpa</td><td>34.8</td><td>1-20IVI top</td><td>1-20M bot</td><td>1-20IVI top</td><td>1-25IVI top</td><td>1-251VI t0p</td><td>1-25W t0p</td><td>1-301VI top</td><td>1-30IVI top</td><td></td></t<> | 4.5 metres | 1.5 Kpa | 34.8 | 1-20IVI top | 1-20M bot | 1-20IVI top | 1-25IVI top | 1-251VI t0p | 1-25W t0p | 1-301VI top | 1-30IVI top | |
| 2.5 Mos 0.09 $1.23 Mip< 1.23 Mip 1.2$ | (15 leet) | (ou hei) | (2307.2) | 1-20WI DOL
10M @ 15" | 1-20101 DOL.
10M @ 15" | 1-20101 DOL. | 1-25WI DUL. | 1-25WI DOL. | 1-25WI DUL. | 1-30W DOL
10M @ 7.5" | 1-30W DOL
10M @ 7.5" | |
| Image: Probability of the state in | | 2 5 Kna | 40.9 | 1-20M ton | 1-25M ton | 1-25M ton | 1-25M ton | 1-25M ton | 1-30M ton | 1-30M ton | 10101 @ 1.5 | |
| $ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$ | | (50 nsf) | (2806.7) | 1-20M hot | 1-25M hot | 1-25M hot | 1-25M hot | 1-25M hot | 1-30M hot | 1-30M hot | | |
| $ \frac{3}{(2)} + \frac{3}{(2)} + \frac{4}{(2)} + \frac{1}{(2)} + 1$ | | (** ***) | () | 10M @ 15" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | | |
| (Порн) (202 h) 1200 hot
100 a 75 1-250 hot
100 a 75 1-260 hot
100 a 75 | | 3.5 Kpa | 47.1 | 1-20M top | 1-25M top | 1-25M top | 1-25M top | 1-30M top | 1-30M top | | | |
| Image: solution of the state of t | | (70 psf) | (3226.1) | 1-20M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. | | | |
| 6.0 metes
(20 left) 15 kga
(30 pc) 44.7
(30 pc) 1-2M log
(30 pc) <td></td> <td></td> <td></td> <td>10M @ 7.5"</td> <td></td> <td></td> <td></td> | | | | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | | | |
| $ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$ | 6.0 metres | 1.5 Kpa | 44.7 | 1-20M top | 1-25M top | 1-25M top | 1-25M top | 1-30M top | 1-30M top | | | |
| $ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$ | (20 feet) | (30 psf) | (3064.5) | 1-20M bot. | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. | | | |
| $ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$ | | | | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | | | |
| $ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | 2.5 Kpa | 52.6 | 1-25M top | 1-25M top | 1-25M top | 1-30M top | 1-30M top | | | | |
| $ \frac{1}{2 \text{ metres}} = \frac{1}{35 \text{ Kpa}} = \frac{1}{600 \text{ g}^{2/5}} = \frac{100 \text{ g}^{2/5}}{100 \text{ g}^{2/5}} = \frac{1000 \text{ g}^{2/5}}{100 \text{ g}^{2/5}} = \frac{100 \text{ g}^{2/5}}{100 \text{ g}^{2/5}} = $ | | (50 psf) | (3607.3) | 1-25M bot. | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. | | | | |
| $ \left[3.3 \mathrm{kl}_{1} & 0.00 & 1-200 \mathrm{kl}_{2} & 1-200 \mathrm{kl}_{$ | | 0.5.1/22 | 00.0 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | 10M @ 7.5 | | | | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | 3.5 Kpa
(70 pcf) | 00.0 | 1-251VI t0p | 1-25W t0p | 1-30W top | 1-30W top | | | | | |
| 7.5 metres
(25 feet) 1.5 Kpa
(0 pcf) 54.4
(372.6 h) 1.28M top
1.28M top | | (70 psi) | (4130.1) | 10M @ 7.5" | 1-25W DOL
10M @ 7.5" | 1-30W DOL
10M @ 7.5" | 1-30W DOL
10M @ 7.5" | | | | | |
| $ \begin{array}{ c c c c c c c } \hline 1.5 \ (00 \ cm) & (372 \ cm) & (1284 \ mb) & (12$ | 7.5 metres | 1.5 Kna | 54.4 | 1-25M ton | 1-25M ton | 1-30M ton | 1-30M ton | | | | | |
| $ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$ | (25 feet) | (30 psf) | (3726.4) | 1-25M bot. | 1-25M bot. | 1-30M bot. | 1-30M bot. | | | | | |
| $ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$ | (23 1661) | (** ***) | (0.20.1) | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | | | | | |
| | | 2.5 Kpa | 64.0 | 1-25M top | 1-30M top | 1-30M top | | | | | | |
| $ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $ | | (50 psf) | (4384.4) | 1-25M bot. | 1-30M bot. | 1-30M bot. | | | | | | |
| $ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | | 10M @ 7.5" | 10M @ 7.5" | 10M @ 7.5" | | | | | | |
| $ \begin{bmatrix} 70 \text{ ps} \\ 90 \text{ rdes} \\ 30 \text{ res} \\ $ | | 3.5 Kpa | 73.6 | 1-25M top | 1-30M top | | | | | | | |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | | (70 psf) | (5042.4) | 1-25M bot. | 1-30M bot. | | | | | | | |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | | 07.5 | 10M @ 7.5" | 10M @ 7.5" | | | | | | | |
| $ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$ | 9 metres | 1.5 Kpa | 67.5 | 1-25M top | 1-30M top | 1-30M top | | | | | | |
| $ \frac{1}{25 \text{ Kpa}} = \frac{1}{305 \text{ kp}} + \frac{1}{305 \text{ kp}} + \frac{1}{300 \text$ | (30 feet) | (30 pst) | (4029.4) | 1-20WI DOL
10M @ 7.5" | 1-30IVI DOL
10M @ 7.5" | 1-30IVI DOL. | | | | | | |
| $ \frac{1}{(50 \text{ sf})} = 1$ | | 2 5 Kna | 79.5 | 1-30M ton | 1-30M ton | 10101 @ 7.5 | | | | | | |
| $\frac{\left[\left(20 \text{geV} \right)^{2} + \left(20 \text{geV} \right$ | | (50 nsf) | (5451.9) | 1-30M hot | 1-30M hot | | | | | | | |
| 3.5 Kpa
(70 psf) 91.5
(627.4) 1-30M top
1-30M bot.
10M @ 7.5" 1-30M top
1-30M top
1-30M bot.
10M @ 7.5" 1-30M top
1-30M | | (** ***) | (1.1.1.) | 10M @ 7.5" | 10M @ 7.5" | | | | | | | |
| I (70 psf) (6274.4) 1-30M bot.
10M @ 7.5" I-30M top I-3 | | 3.5 Kpa | 91.5 | 1-30M top | | | | | | | | |
| Image: Constraint of the | | (70 psf) | (6274.4) | 1-30M bot. | | | | | | | | |
| 10.5 metres 1.5 Kpa 74.4 1-30M top 1-30M top 1-30M top 1-30M bot. 10M @ 7.5" 1-30M bot. 10M @ 7.5" 1-30M bot. 10M @ 7.5" 10M @ 7.5" 1-30M bot. 1-30M bot. <t< td=""><td></td><td></td><td></td><td>10M @ 7.5"</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | | | 10M @ 7.5" | | | | | | | | |
| (35 feet) (30 psf) (5096.2) 1-30M bot. 1-30M bot. 1-30M bot. 1-30M bot. 10M @ 7.5" | 10.5 metres | 1.5 Kpa | 74.4 | 1-30M top | 1-30M top | | | | | | | |
| $\frac{12 \text{ m}^{12} m$ | (35 feet) | (30 psf) | (5096.2) | 1-30M bot. | 1-30M bot. | | | | | | | |
| $\frac{12 \text{ m} \text{m} \text{m} \text{m} \text{m} \text{m} \text{m} m$ | | 0.5.1/ | 07.7 | 10M @ 7.5" | 10M @ 7.5" | | | | | | | |
| Image: Second | | 2.5 Kpa | 8/./ | 1-30M top | | | | | | | | |
| 12 metres 15 Kpa 1010 1-30M tot 12 metres 1.5 Kpa 6922.2) 1-30M tot 12 metres (30 psf) (5773.5) 1-30M tot 1-30M bot 1-30M bot 1000 @ 7.5" 2.5 Kpa 99.4 6699.8) 3.5 Kpa (114.5) 3.5 Kpa (114.5) 3.5 Kpa (114.5) | | (ou hei) | (0009.2) | 1-30W DOL
10M @ 7.5" | | | | | | | | |
| 12 metres 1.5 Kpa 84.2 1-30M top 1-30M bot. 1-30M bot. 10M @ 7.5" 1-30M bot. <t< td=""><td></td><td>3.5 Kna</td><td>101.0</td><td>10101 101.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | 3.5 Kna | 101.0 | 10101 101.0 | | | | | | | | |
| 12 metres 15 Kpa 84.2 1-30M top 12 metres (30 psf) (5773.5) 1-30M top 2.5 Kpa 99.4 (60 sepf) (6809.8) | | (70 nsf) | (6922.2) | | | | | | | | | |
| 12 metres
(40 feet) 1.5 Kpa
(30 psf) 84.2
(5773.5) 1.30M top
1.30M bot.
10M @ 7.5" 1.30M top
1.30M top
1.30M bot.
10M @ 7.5" 1.30M top
1.30M top
1 | | (· F=') | (···-/ | | | | | | | | | |
| (40 feet) (30 psf) (5773.5) 1-30M bot.
10M @ 7.5" 1 100 @ 7.5" 2.5 Kpa
(50 psf) 99.4
(6809.8) 5 5 114.5 5 114.5 5 114.5 5 114.5 5 114.5 5 114.5 5 114.5 <td>12 metres</td> <td>1.5 Kpa</td> <td>84.2</td> <td>1-30M top</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | 12 metres | 1.5 Kpa | 84.2 | 1-30M top | | | | | | | | |
| 10M @ 7.5" 10M @ 7.5" 2.5 Kpa 99.4 (50 psf) (6809.8) 3.5 Kpa 114.5 (70 psf) (726 f.2) | (40 feet) | (30 psf) | (5773.5) | 1-30M bot. | | | | | | | | |
| 2.5 Kpa 99.4 (50 psf) (6809.8) 3.5 Kpa 114.5 (70 psf) (7296.2) | | | | 10M @ 7.5" | | | | | | | | |
| (50 psf) (6809.8) 3.5 Kpa 114.5 (70 psf) (70 psf) | | 2.5 Kpa | 99.4 | | | | | | | | | |
| 3.5 Kpa 114.5 (70 pc) (7246 c) | | (50 psf) | (6809.8) | | | | | | | | | |
| 3.3 R/d 114.3 | | 0.5.1/ | 114.5 | | | | | | | | | |
| | | 3.5 Kpa
(70 nsf) | (78/6.2) | | | | | | | | | |





Lintel Width = 4" (102 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 15" = use 10M stirrups @ 15" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			Carry	ng secona s	Lintel Span - I	Metres (feet)	t Frame Roo	•			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	26.0	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top			
(10 feet)	(30 psf)	(1784.3)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.			
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"			
	2.5 Kpa	30.4	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	1-20M top					
	(50 psf)	(2080.4)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	3.5 Kpa	34.7	1-10M top	1-10M top	1-10M top	1-15M top	1-20M top						
	(70 psf)	(2376.5)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
4.5 metres	1.5 Kpa	34.4	1-10M top	1-10M top	1-10M top	1-15M top	1-20M top						
(15 teet)	(30 pst)	(2360.2)	1-10M DOT.	1-10M DOT.	1-10M DOT.	1-15M DOT.	1-20M DOT.						
	2.5.Kpg	40.6	1 10M top	1 10M top	10101 @ 0.0	1 15M top	TUIVI @ 5.5						
	2.3 Kµd (50 ncf)	40.0	1-10M hot	1-10M bot	1-15M bot	1-15M bot							
	(50 psi)	(2115.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"							
	3.5 Kna	46.7	1-10M ton	1-10M top	1-15M top	10111 @ 0.0							
	(70 psf)	(3199.1)	1-10M bot.	1-10M bot.	1-15M bot.								
	(,	(0.000.)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"								
6.0 metres	1.5 Kpa	44.3	1-10M top	1-10M top	1-15M top	1-15M top							
(20 feet)	(30 psf)	(3037.4)	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"							
	2.5 Kpa	52.2	1-10M top	1-10M top	1-15M top								
	(50 psf)	(3580.3)	1-10M bot.	1-10M bot.	1-15M bot.								
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"								
	3.5 Kpa	60.2	1-10M top	1-15M top									
	(70 psf)	(4123.1)	1-10M bot.	1-15M bot.									
7.5	4.5.10	540	10M @ 5.5"	10M @ 5.5"	4.4554.1.1								
7.5 metres	1.5 Kpa	54.0	1-10IVI top	1-15W top	1-15WI top								
(20 1661)	(30 psr)	(3099.4)	1-10W DOL.	1-15W DOL.	1-15IVI DOL.								
	2.5 Kna	63.6	1-10M top	1-15M top	10101 @ 0.0								
	(50 nsf)	(4357.4)	1-10M hot	1-15M hot									
	(00 por)	(1001.1)	10M @ 5.5"	10M @ 5.5"									
	3.5 Kpa	73.2	1-10M top	1-15M top									
	(70 psf)	(5015.3)	1-10M bot.	1-15M bot.									
			10M @ 5.5"	10M @ 5.5"									
9 metres	1.5 Kpa	67.1	1-10M top	1-15M top									
(30 feet)	(30 psf)	(4602.4)	1-10M bot.	1-15M bot.									
			10M @ 5.5"	10M @ 5.5"									
	2.5 Kpa	79.1	1-10M top										
	(50 pst)	(5424.9)	1-10M bot.										
	0.5.1/22	01.1	10M @ 5.5										
	3.5 Kpa (70 pcf)	91.1	1-TUIVI top										
	(10 h21)	(0247.0)	10M @ 5.5"										
10.5 metres	1.5 Kna	74.0	1-10M ton	1-15M top									
(35 feet)	(30 psf)	(5069.2)	1-10M bot.	1-15M bot.									
()	(** •**)	(******)	10M @ 5.5"	10M @ 5.5"									
	2.5 Kpa	87.3	1-10M top										
	(50 psf)	(5982.2)	1-10M bot.										
			10M @ 5.5"										
	3.5 Kpa	100.6	1-15M top										
	(70 psf)	(6895.1)	1-15M bot.										
			10M @ 5.5"										
12 metres	1.5 Kpa	83.8	1-10M top										
(40 feet)	(30 psf)	(5746.5)	1-10M bot.										
	0.5.1/	00.0	10M @ 5.5"										
	2.5 Kpa (50 pof)	99.U (6790 0)	1-15M bot										
	(ou hei)	(0702.0)	10M @ 5.5"										
	3.5 Kna	114 1	10WI @ 0.0										
	(70 nsf)	(7819.1)											
	(por)	(



Lintel Width = 6" (152 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 5.5" = use 10M stirrups @ 5.5" O/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			Garry	ing decond o	Lintel Span - I	Vetres (feet)	C I Taine Noo	•				
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)			
3 metres	1.5 Kpa	26.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top			
(10 feet)	(30 psf)	(1800.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.			
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"			
	2.5 Kpa	30.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
	(50 psf)	(2096.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"				
	3.5 Kpa	34.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top					
	(70 pst)	(2392.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.					
A E motros	1 E V no.	04.7	10M@7	10M @ /	10M @ /	10M @ /	10M @ /	10W @ /	10W @ /					
4.0 IIIelles	1.0 Kµa (20 pcf)	04.7 (0076-1)	1-15W top	1-15W LOP	1-15W top	1-15W top	1-15W top	1-20W top	1-20W top					
(10 1001)	(50 psi)	(2070.1)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"					
	2.5 Kna	40.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M ton	1-20M ton	10111 6 7					
	(50 psf)	(2795.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.						
	(····/	(,	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"						
	3.5 Kpa	46.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top							
	(70 psf)	(3215.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
6.0 metres	1.5 Kpa	44.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top							
(20 feet)	(30 psf)	(3053.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
	2.5 Kpa	52.5	1-15M top	1-15M top	1-15M top	1-15M top								
	(50 pst)	(3596.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.								
	0.5 //	00.4	10M @ /	10M @ /	10M @ /	10M @ 7								
	3.5 Kpa (70 pcf)	00.4	1-15W top	1-15W top	1-15W top									
	(70 psi)	(4139.0)	10M @ 7"	1-15W DOL.	10M @ 7"									
7.5 metres	1.5 Kna	54.2	1-15M top	1-15M top	1-15M top	1-15M top								
(25 feet)	(30 psf)	(3715.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.								
()	(** •**)	(0.100)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"								
	2.5 Kpa	63.8	1-15M top	1-15M top	1-15M top									
	(50 psf)	(4373.3)	1-15M bot.	1-15M bot.	1-15M bot.									
			10M @ 7"	10M @ 7"	10M @ 7"									
	3.5 Kpa	73.4	1-15M top	1-15M top	1-15M top									
	(70 psf)	(5031.3)	1-15M bot.	1-15M bot.	1-15M bot.									
		07.4	10M @ 7"	10M @ 7"	10M @ 7"									
9 metres	1.5 Kpa	67.4	1-15M top	1-15W top	1-15M top									
(30 feet)	(30 psr)	(4018.3)	1-15W DOL.	1-15IVI DOL.	1-15W DOL.									
	2.5 Kna	79.4	1-15M top	1-15M top	TUIVI @ 7									
	(50 nsf)	(5440.8)	1-15M hot	1-15M hot										
	(00 por)	(0110.0)	10M @ 7"	10M @ 7"										
	3.5 Kpa	91.4	1-15M top	1-15M top										
	(70 psf)	(6263.3)	1-15M bot.	1-15M bot.										
			10M @ 7"	10M @ 7"										
10.5 metres	1.5 Kpa	74.2	1-15M top	1-15M top	1-15M top									
(35 feet)	(30 psf)	(5085.1)	1-15M bot.	1-15M bot.	1-15M bot.									
			10M @ 7"	10M @ 7"	10M @ 7"									
	2.5 Kpa	87.5	1-15M top	1-15M top										
	(50 pst)	(5998.1)	1-15M bot.	1-15M bot.										
	2.5.Kpg	100.9	1 15M top	TUM @ 7										
	0.0 πμα (70 nef)	(6011-1)	1-15M hot											
	(10 hol)	(0011.1)	10M @ 7"											
12 metres	1.5 Kpa	84.1	1-15M top	1-15M top										
(40 feet)	(30 psf)	(5762.4)	1-15M bot.	1-15M bot.										
,,	х F.7		10M @ 7"	10M @ 7"										
	2.5 Kpa	99.2	1-15M top											
	(50 psf)	(6798.7)	1-15M bot.											
			10M @ 7″											
	3.5 Kpa	114.3	1-15M top											
	(70 psf)	(7835.1)	1-15M bot.											
			10M @ 7"											





Lintel Width = 6" (152 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 7" = use two 10M stirrups @ 7" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrving Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			Garry	Linte	l Span - Metres	(feet)		•			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	26.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top		
(10 feet)	(30 psf)	(1832.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.		
		no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	31.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
	(50 psf)	(2128.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
	2 E Kno	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5		
	(70 nef)	(2424.2)	1-15M hot	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-2010 top	1-2010 top		
	(10 p31)	(2727.2)	no stirruns	no stirruns	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
4.5 metres	1.5 Kpa	35.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
(15 feet)	(30 psf)	(2407.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5		
	2.5 Kpa	41.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
	(50 psf)	(2827.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
	0.5.1/22	47.4	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa (70 pcf)	47.4	1-15W top	1-15W top	1-15W top	1-15W top	1-15W top	1-20M bot	1-20M bot	2-15W top 2.15M bot			
	(70 psi)	(3240.9)	10M @ 9.5"	1-TJIW DUL 10M @ 9.5"	1-15iW DUL 10M @ 9.5"	1-15iW DUL 10M @ 9.5"	1-15W DOL. 10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	Z=TJIWI DUL			
6.0 metres	1.5 Kna	45.0	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
(20 feet)	(30 psf)	(3085.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.			
· · /	,	· · /	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
	2.5 Kpa	52.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top				
	(50 psf)	(3628.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.				
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
	3.5 Kpa	60.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top					
	(70 pst)	(41/0.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
7.5 metres	1.5 Kna	54.7	1-15M top	10101 @ 9.0	10W @ 9.5	10M @ 9.5	1.15M top	1.20M top					
(25 feet)	(30 nsf)	(3747 1)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot					
(201000)	(00 poi)	(0/ 11.1)	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	64.3	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top						
	(50 psf)	(4405.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.						
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	3.5 Kpa	73.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top						
	(70 pst)	(5063.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.						
0 metrec	1.5 Kna	67.8	1.15M top	10101 @ 9.0	10W @ 9.5	10M @ 9.5	1.20M top						
(30 feet)	(30 nsf)	(4650 1)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot						
(001001)	(00 poi)	(1000.1)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	2.5 Kpa	79.8	1-15M top	1-15M top	1-15M top	1-15M top							
	(50 psf)	(5472.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.							
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	3.5 Kpa	91.8	1-15M top	1-15M top	1-15M top								
	(70 psf)	(6295.1)	1-15M bot.	1-15M bot.	1-15M bot.								
10.5 matrac	15 Kno	7/ 7	10M @ 9.5	10M @ 9.5	10M @ 9.5	1-15M ton							
(35 feet)	(30 nef)	(5117.0)	1-15M bot	1-15M hot	1-15M hot	1-15M hot							
100 1001)	(00 hai)	(0111.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	2.5 Kpa	88.0	1-15M top	1-15M top	1-15M top	1-20M top							
	(50 psf)	(6029.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	3.5 Kpa	101.3	1-15M top	1-15M top	1-15M top								
	(70 psf)	(6942.9)	1-15M bot.	1-15M bot.	1-15M bot.								
10 motors	15 //	04.5	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	1.0014 +							
(AD feet)	1.5 Kpa (30 nef)	04.0 (570/ 2)	1-15M top	1-15M top	1-15M top	1-20M top 1-20M bot							
(40 1661)	(on hei)	(3134.2)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							
	2.5 Kpa	99.7	1-15M top	1-15M top	1-15M top	1011 8 0.0							
	(50 psf)	(6830.6)	1-15M bot.	1-15M bot.	1-15M bot.								
	,	. ,	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"								
	3.5 Kpa	114.8	1-15M top	1-15M top									
	(70 psf)	(7866.9)	1-15M bot.	1-15M bot.									
			10M @ 9.5"	10M @ 9.5"									



(355mm)

14~



6″ (152mm)

Lintel Width = 6" (152 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Eleer Cleer	Cround anour	Total Fastarad	Minimum Reinforcement for Lintels in Load Bearing Walls										
Floor Clear	Ground Snow	Iniform Load			Carry	ng secona s Linte	torey wood i I Snan - Metres	-rame + Lign	t Frame Roo	T			
opaii metres (feet)	Kna (nsf)	KN/m (lhs/ft)	3.6 m (12 ft)	3 0 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4 8 m (16 ft)	5 1 m (17 ft)	5 /l m (18 ft)	5.7 m (10 ft)	6.0 m (20 ft)		
3 metres	1.5 Kna	26.7	1-20M top	2-15M ton	2-15M top	1-25M ton	2-20M ton	2-20M ton	0.4 III (10 II)	0.7 m (13 m)	0.0 11 (20 11)		
(10 feet)	(30 psf)	(1832.0)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.					
()	()	()	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"					
	2.5 Kpa	31.0	2-15M top	2-15M top	1-25M top	2-20M top							
	(50 psf)	(2128.1)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.							
		· · /	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"							
	3.5 Kpa	35.4	2-15M top	1-25M top									
	(70 psf)	(2424.2)	2-15M bot.	1-25M bot.									
			2-10M @ 9.5"	10M @ 9.5"									
4.5 metres	1.5 Kpa	35.1	2-15M top	1-25M top									
(15 feet)	(30 psf)	(2407.9)	2-15M bot.	1-25M bot.									
			2-10M @ 9.5"	10M @ 9.5"									
	2.5 Kpa	41.3											
	(50 pst)	(2827.4)											
	2.5 Kpg	47.4											
	(70 ncf)	47.4											
	(70 psi)	(3240.3)											
6.0 metres	1.5 Kna	45.0											
(20 feet)	(30 psf)	(3085.2)											
()	()	()											
	2.5 Kpa	52.9											
	(50 psf)	(3628.0)											
	3.5 Kpa	60.9											
	(70 psf)	(4170.9)											
7.5 metres	1.5 Kpa	54.7											
(25 feet)	(30 psf)	(3747.1)											
	0.5 //	64.0											
	2.5 Kpa (50 pot)	04.3 (440E 1)											
	(ou hei)	(4405.1)											
	3.5 Kna	73.9											
	(70 nsf)	(5063.1)											
	(10 poi)	(0000.1)											
9 metres	1.5 Kpa	67.8											
(30 feet)	(30 psf)	(4650.1)											
	2.5 Kpa	79.8											
	(50 psf)	(5472.6)											
	3.5 Kpa	91.8											
	(70 psf)	(6295.1)											
10.5 metres	1.5 Voc	74.7											
(35 feet)	1.0 KPa (30 nef)	(5117.0)											
(00 1001)	(oo hai)	(3117.0)											
	2.5 Kpa	88.0											
	(50 psf)	(6029.9)											
	()	(******)											
	3.5 Kpa	101.3											
	(70 psf)	(6942.9)											
12 metres	1.5 Kpa	84.5											
(40 feet)	(30 psf)	(5794.2)											
	2.5 Kpa	99.7											
	(50 psf)	(6830.6)											
	0.5 //	114.0											
	3.5 Kpa	114.8											
	(ru psi)	(1000.9)											



(355mm)

14 ~



Lintel Width = 6" (152 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

	Cround anour	Total Eastared	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Snan	load	Iniform Load			Carry	ng secona s Linte	i Snan - Metres	rame + Lign (feet)	t Frame Roo	T			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	27.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top		
(10 feet)	(30 psf)	(1863.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"		
	2.5 Kpa	31.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top		
	(50 psf)	(2160.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"		
	3.5 Kpa	35.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top		
	(70 psf)	(2456.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.		
A E motros	1 E Kaa	25.0	no stirrups	no stirrups	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12		
4.0 IIIelies	1.0 Kµa (30 ncf)	(2/20.8)	1-15W top	1-15M bot	1-15W top	1-15M bot	1-15W top	1-15W top	1-15W top	1-15M bot	1-20101 t0p		
(10 1001)	(50 psi)	(2409.0)	no stirruns	no stirruns	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	1-15W DOL 10M @ 12"	10M @ 12"		
	2.5 Kna	41 7	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M ton	1-15M ton	1-15M top	1-20M ton	1-20M ton		
	(50 psf)	(2859.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
	(** #**)	()	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"		
	3.5 Kpa	47.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top		
	(70 psf)	(3278.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.		
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"		
6.0 metres	1.5 Kpa	45.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
(20 feet)	(30 psf)	(3117.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"		
	2.5 Kpa	53.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
	(50 pst)	(3659.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
	2.5. Kaa	61.0	no stirrups	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12		
	3.3 Kµa (70 pcf)	(4202.7)	1-15W top	1-15M bot	1-15W top	1-15W top	1-15W top	1-20101 t0p	1-20101 top	2-15W top 2-15M bot	1-25M hot		
	(70 psi)	(4202.7)	no stirruns	no stirruns	1-15W DUL 10M @ 12"	1-15iW DOL. 10M @ 12"	10M @ 12"	1-20101 DOL.	10M @ 12"	2-10M @ 12"	1-25W DOL 10M @ 6"		
7.5 metres	1.5 Kna	55.1	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M ton	1-15M ton	1-20M top	1-20M ton	2-15M ton		
(25 feet)	(30 psf)	(3779.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
()	(00 p00)	(0)	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"		
	2.5 Kpa	64.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(50 psf)	(4436.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"		
	3.5 Kpa	74.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top		
	(70 psf)	(5094.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"		
9 metres	1.5 Kpa	68.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
(30 feet)	(30 psr)	(4082.0)	I-ISIVI DOL	1-15IVI DOL.	1-15IVI DOL.	1-15IVI DOL.	1-15IVI DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL.	1-25IVI DOL.		
	2.5 Kna	80.3	1-15M ton	1-15M top	1-15M top	1-15M ton	1-20M ton	1-20M ton	2-15M ton	2-10W @ 0	2-20M ton		
	(50 nsf)	(5504.5)	1-15M hot	1-15M bot	1-15M bot	1-15M hot	1-20M hot	1-20M hot	2-15M hot	1-25M hot	2-20M hot		
	(00 poi)	(000 1.0)	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"		
	3.5 Kpa	92.3	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top	1-30M top		
	(70 psf)	(6326.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.		
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"	10M @ 6"		
10.5 metres	1.5 Kpa	75.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top		
(35 feet)	(30 psf)	(5148.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12.5"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"		
	2.5 Kpa	88.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	1-30M top		
	(50 pst)	(6061.8)	1-15W DOT.	1-15IVI DOL.	1-15M DOT.	1-15M DOT.	1-2010 DOT.	1-20M DOT.	2-15M DOT.	1-25M DOT.	1-3UW DOT.		
	2.5 Kpg	101.0	1 15M top	1 15M top	1 15M top	1 15M top	1 20M top	10WI@0	2-10W @ 0	10W @ b	TUM @ 6		
	0.0 Nμa (70 nef)	(697/17)	1-15M bot	1-15M hot	1-15M hot	1-15M hot	1-201/1 tup 1-201/1 hot	2-15/VLUP 2-15/M hot	1-25M hot	2-20101 LUP 2-20101 hot			
	(10 hol)	(00/4.7)	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"			
12 metres	1.5 Koa	85.0	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top		
(40 feet)	(30 psf)	(5826.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
,,	x r: /	x : /	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	2-10M @ 6"	10M @ 6"	2-10M @ 6"		
	2.5 Kpa	100.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(50 psf)	(6862.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
			no stirrups	10M @ 12″	10M @ 12"	10M @ 12″	10M @ 6"	2-10M @ 6"	10M @ 6"	2-10M @ 6"			
	3.5 Kpa	115.2	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	2-20M top	1-25M+1-15M top			
	(70 psf)	(7898.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-20M bot.	1-25M+1-15M bot.			
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"			



(452mm

` ©



Lintel Width = 6" (152 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 2-10M @ 6" = use two 10M stirrups @ 6" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Span	load	Uniform Load				Linte	l Span - Metres	(feet)						
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)			
3 metres	1.5 Kpa	27.2	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top			
(10 teet)	(30 pst)	(1863.9)	1-2010 DOT.	1-2010 DOT.	1-20M DOT.	2-15M DOT.	2-15M DOL	1-25W DOT.	1-25M DOL 10M @ 10"	2-20101 DOT.	1-30M DOT.			
	2.5 Kna	31.5	1-20M ton	1-20M ton	2-15M ton	2-10M @ 12	1-25M ton	2-20M ton	2-20M ton	1-30M ton	TUNI @ 12			
	(50 psf)	(2160.0)	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.				
	((,	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 6"				
	3.5 Kpa	35.8	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top					
	(70 psf)	(2456.1)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.					
			10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	10M @ 6"					
4.5 metres	1.5 Kpa	35.6	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top					
(15 feet)	(30 pst)	(2439.8)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.					
	2.5 Kna	<i>A</i> 1 7	10WI@12 2-15M top	2-10W @ 12	2-10WI@12	10WI@12 2-20MI top	2-10W @ 12	2-10IVI @ 6	TUM @ 6					
	(50 nsf)	(2859.2)	2-15M top	2-15M top	1-25M hot	2-20M top	1-30M hot							
	(00 por)	(2000.2)	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"							
	3.5 Kpa	47.8	2-15M top	1-25M top	2-20M top	1-30M top								
	(70 psf)	(3278.7)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.								
			2-10M @ 12"	10M @ 6"	2-10M @ 6"	10M @ 6"								
6.0 metres	1.5 Kpa	45.5	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top							
(20 feet)	(30 psf)	(3117.0)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.							
	0 E 1/20	50.4	2-10M @ 12"	10M @ 6"	10M @ 6"	2-10M @ 6"	10M @ 6"							
	2.5 Kµa (50 psf)	(2650.0)	1-25M hot	2-2014 top 2-2014 bot	2-20101 t0p 2-20101 hot									
	(50 psi)	(3033.3)	10M @ 6"	2-2010 DOL 2-10M @ 6"	2-2010 DOL 2-10M @ 6"									
	3.5 Kpa	61.3	1-25M top	2-20M top	LIUMOU									
	(70 psf)	(4202.7)	1-25M bot.	2-20M bot.										
			10M @ 6"	2-10M @ 6"										
7.5 metres	1.5 Kpa	55.1	1-25M top	2-20M top	1-30M top									
(25 feet)	(30 psf)	(3779.0)	1-25M bot.	2-20M bot.	1-30M bot.									
	0.5.1/22	047	10M @ 6"	2-10M @ 6"	10M @ 6"									
7.5 metres (25 feet)	2.5 Kpa (50 pcf)	64.7 (4426.0)	2-20M top	1-30M top 1-20M bot										
	(50 psi)	(4430.9)	2-20W DOL 2-10M @ 6"	1-30W DOL 10M @ 6"										
	3.5 Kpa	74.3	1-30M top	10101 @ 0										
	(70 psf)	(5094.9)	1-30M bot.											
			10M @ 6"											
9 metres	1.5 Kpa	68.3	2-20M top	1-30M top										
(30 feet)	(30 psf)	(4682.0)	2-20M bot.	1-30M bot.										
	0.5.16	00.0	2-10M @ 6"	10M @ 6"										
	2.5 Kpa	80.3	1-30M top											
	(JU þ51)	(5504.5)	10M @ 6"											
	3.5 Kpa	92.3	1011 8 0											
	(70 psf)	(6326.9)												
10.5 metres	1.5 Kpa	75.1	1-30M top											
(35 feet)	(30 psf)	(5148.8)	1-30M bot.											
	0.5.1/20	00.4	10M @ 6											
	2.0 Kµa (50 nsf)	00.4												
	(ou hoi)	(0001.0)												
	3.5 Kpa	101.8												
	(70 psf)	(6974.7)												
12 metres	1.5 Kpa	85.0												
(40 feet)	(30 psf)	(5826.1)												
	0 E Vac	100.1												
	2.0 Kpa (50 nef)	100.1 (6862.4)												
	(an hei)	(0002.4)												
	3.5 Kpa	115.2												
	(70 psf)	(7898.7)												
Image: Second														





Lintel Width = 6" (152 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 2-10M @ 6" = use two 10M stirrups @ 6" 0/C

	0	Total Fastered	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Floor Clear	GLORING SUDA	Iotal Factored			Carry	ng second s	torey wood i I Span - Matras	-rame + Lign	t Frame Roo	T				
opan metres (feet)	Kna (nef)	KN/m (lhs/ft)	0.0 m (3.ft)	1 2 m (4 ft)	15m (5ft)	1.8 m (6 ft)	2 1 m (7 ft)	2 / m (8 ft)	2.7 m (0.ft)	3.0 m (10 ft)	3 3 m (11 ft)			
3 metres	1.5 Kpa	27.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
(10 feet)	(30 psf)	(1895.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
	,	. ,	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"			
	2.5 Kpa	32.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
	(50 psf)	(2191.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"			
	3.5 Kpa	36.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
	(70 psf)	(2487.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
45.001.00	4.5.10	00.4	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"			
4.5 metres	1.5 Kpa	36.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
(15 leet)	(ou hei)	(2471.0)	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20W DOL 10M @ 15"	1-20101 DOL. 10M @ 15"	1-20W DOL 10M @ 15"			
	2 5 Kna	42.2	1-20M ton	1-20M top	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M top	1-20M ton			
	(50 psf)	(2891.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
	(** ***)	()	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"			
	3.5 Kpa	48.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
	(70 psf)	(3310.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
			no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"			
6.0 metres	1.5 Kpa	45.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
(20 feet)	(30 psf)	(3148.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"			
	2.5 Kpa	53.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
	(50 pst)	(3691.7)	1-20W DOT.	1-20IVI DOL	1-20M DOT.	1-20101 DOT.	1-20M DOT.	1-20M DOT.	1-20M DOT.	1-20101 DOT.	1-20101 DOT.			
	3.5 Kna	61.8	1-20M top	1-20M top	1-20M top	1_20M top	1-20M top	1-20M top	1-20M top	1_20M top	10101 @ 15 2-15M top			
	(70 nsf)	(4234 5)	1-20M top	1-20M hot	1-20M top	1-20M hot	1-20M top	1-20M top	1-20M top	1-20M hot	2-15M top 2-15M hot			
	(10 p31)	(+204.0)	no stirruns	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"			
7.5 metres	1.5 Kpa	55.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top			
(25 feet)	(30 psf)	(3810.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.			
		. ,	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"			
	2.5 Kpa	65.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top			
	(50 psf)	(4468.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.			
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"			
	3.5 Kpa	74.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top			
	(70 pst)	(5126.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.			
0 motros	1.5.Kpg	0.02	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	2-10WI@15	2-10WI@7.5			
(30 feet)	(30 nsf)	(4713.8)	1-20M top	1-20M hot	1-20M top	1-20M hot	1-20M top	1-20M top	1-20M top	1-20M hot	2-15M top 2-15M hot			
(001001)	(00 poi)	(1110.0)	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"			
	2.5 Kpa	80.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top			
	(50 psf)	(5536.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 7.5"			
	3.5 Kpa	92.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	1-25M top			
	(70 psf)	(6358.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	1-25M bot.			
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 7.5"	10M @ 7.5"			
10.5 metres	1.5 Kpa	75.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top			
(35 feet)	(30 pst)	(5180.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.			
	2.5.Kpg	00.0	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	10W @ 15	2-10WI@15	2-10W/@7.5			
	(50 nsf)	(6093.6)	1-20M top	1-20M hot	1-20M hot	1-20M hot	1-20M top	1-20M hot	2-15M top	2-15M hot	1-25M top			
	(00 poi)	(0000.0)	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	10M @ 7.5"			
	3.5 Kpa	102.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(70 psf)	(7006.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"			
12 metres	1.5 Kpa	85.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top			
(40 feet)	(30 psf)	(5857.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"			
	2.5 Kpa	100.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(50 psf)	(6894.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
	2 E 1/22	115.7	no stirrups	1 00M top	1 00M top	1 00M top	1 20M top	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"			
	0.0 Nµa (70 nef)	(7020 5)	1-2014 LUP	1-2014 top	1-2014 LUP	1-2014 top	1-2014 LUP	2=15M hot	1-25M bot	2-20141 LUP 2-2014 hot	1-20Wi+1-10Wi LOP 1-25M±1-15M bot			
	(10 h2l)	(1900.9)	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	1-2010 DUL 10M @ 15"	2-10W DUL 2-10M @ 7.5"	10M @ 7.5"	2-2010 DUL 2-10M @ 7.5"	2-10M @ 7.5"			
			no sunups	101111111111	1011111111	10111111111	IUMI II II	2101111111111	10101 @ 1.J	210101111111	2 IUM 1.J			





Lintel Width = 6" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C

	Cround onour	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls										
Snan	load	Iniform Load			Carryi	ng secona s Linte	Lorey wood r I Snan - Metres I	<pre>'rame + Lign (feet)</pre>	t Frame Roo	ſ			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)		
3 metres	1.5 Kpa	27.7	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top		
(10 feet)	(30 psf)	(1895.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.		
			10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"		
	2.5 Kpa	32.0	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	2-20M top		
	(50 psf)	(2191.8)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	2-20M bot.		
	0.5.16	00.0	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"		
	3.5 Kpa (70 pcf)	30.3	1-20101 top	1-20IVI top	2-15M top	2-15W top	1-25M top	1-25W t0p	2-2010 top	2-201VI top	1-30101 top		
	(70 psi)	(2407.9)	1-20W DOL 10M @ 15"	1-20W DOL 10M @ 15"	2-10M @ 15"	2-10M @ 15"	1-25W DOL 10M @ 15"	1-25W DOL 10M @ 15"	2-20W DOL 2-10M @ 15"	2-20W DUL 2-10M @ 15"	1-30W DOL 10M @ 7.5"		
4.5 metres	1.5 Kpa	36.1	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	1-25M top	2-20M top	2-20M top	1-30M top		
(15 feet)	(30 psf)	(2471.6)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.		
. ,			10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 7.5"		
	2.5 Kpa	42.2	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top		
	(50 psf)	(2891.0)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.		
			10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
	3.5 Kpa	48.3	1-20M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top		
	(70 psr)	(3310.5)	1-20101 DOL.	2-15WI DOL 2.10M @ 15"	1-20WI DOL.	1-25IVI DOL.	2-20₩ DOL 2.10M @ 7.5"	1-30WI DOL.	1-25IVI+1-20IVI DOL. 2 10M @ 7.5"	2-20WI DOL.	2-20WI DOL.		
6.0 metres	1.5 Kna	45.9	1-20M ton	2-10M @ 15	2-15M ton	1-25M ton	2-100 @ 7.5	1-30M ton	2-10W @ 7.5	2-1001@7.5	2-10W @ 7.5		
(20 feet)	(30 nsf)	(3148.8)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M hot.	1-30M bot.	1-25M+1-20M bot	2-25M bot.		
(201001)	(00 poi)	(0110.0)	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
	2.5 Kpa	53.9	2-15M top	2-15M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top			
	(50 psf)	(3691.7)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.			
			2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"			
	3.5 Kpa	61.8	2-15M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top					
	(70 psf)	(4234.5)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.					
7.5 motros	1 5 Km	55.6	2-10M @ 15	10M @ 7.5	2-10M @ 7.5	10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	0.05M top				
(25 feet)	(30 nsf)	(3810.8)	2-15M top 2-15M hot	1-25M hot	1-25M hot	2-2010 top 2-2010 hot	1-30M hot	1-25M+1-20M hot	2-25M top				
(201001)	(00 poi)	(0010.0)	2-10M @ 15"	10M @ 15"	10M @ 7.5"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	2.5 Kpa	65.2	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top					
	(50 psf)	(4468.8)	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.					
			10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa	74.8	1-25M top	2-20M top	1-30M top	2-25M top	2-25M top						
	(70 pst)	(5126.7)	1-25M bot.	2-20M bot.	1-30M bot.	2-25M bot.	2-25M bot.						
9 metres	1.5 Kna	68.8	1-25M ton	2-10W @ 7.5	1-30M ton	2-10W @ 7.5 1-25M±1-20M ton	2-10W @ 7.5 2-25M ton						
(30 feet)	(30 psf)	(4713.8)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.						
()	(()	10M @ 7.5"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"						
	2.5 Kpa	80.8	2-20M top	1-30M top	1-25M+1-20M top	2-25M top							
	(50 psf)	(5536.3)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.							
			2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"							
	3.5 Kpa	92.8	1-30M top	1-25M+1-20M top	2-25M top								
	(70 pst)	(6358.7)	1-30M bot.	1-25M+1-20M bot.	2-25M bot.								
10.5 matrae	15 Kno	75.6	1.25M ton	2-1010 @ 7.5 2-2014 top	2-10W @ 7.5	2-25M ton	2_25M ton						
(35 feet)	(30 nsf)	(5180.6)	1-25M hot	2-2010 top 2-2010 hot	1-30M hot	2-25W top 2-25M hot	2-25W top 2-25M hot						
(00 1001)	(00 hoi)	(0.00.0)	10M @ 7.5"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"						
	2.5 Kpa	88.9	2-20M top	1-30M top	2-25M top	2-25M top							
	(50 psf)	(6093.6)	2-20M bot.	1-30M bot.	2-25M bot.	2-25M bot.							
			2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"							
	3.5 Kpa	102.2	1-25M+1-15M top	2-25M top									
	(70 psf)	(7006.5)	1-25M+1-15M bot.	2-25M bot.									
10 matras	15 Koo	85 5	2-10M @ 7.5"	2-10M @ 7.5"	1-25M-1 20M ton	2-25M top							
12 menes (40 faat)	1.0 Nµa (30 nef)	00.0 (5857 Q)	2-201VI 100 2-201M hot	1-301/1 top 1-30M bot	1-20101+1-20101 TOP	2-23W top 2-25M hot							
(דט וככו)	(oo hai)	(0001.0)	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"							
	2.5 Kpa	100.6	1-25M+1-15M ton	2-25M top	2-25M top	L 10m @ 1.0							
	(50 psf)	(6894.2)	1-25M+1-15M bot.	2-25M bot.	2-25M bot.								
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"								
	3.5 Kpa	115.7	1-25M+1-20M top	2-25M top									
	(70 psf)	(7930.5)	1-25M+1-20M bot.	2-25M bot.									
			2-10M @ 7.5"	2-10M @ 7.5"									



553mm



Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C



Elear Clear	Ground onow	Total Eastarad			Minim	um Reinfor	cement for	Lintels in L	oad Bearing	Walls		
Snan	load	Iniform I oad			Carry	ing second	Lintel Snan -	Metres (feet)	Light Frame	ROOT		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	3.6 m (12 ft)
3 metres	1.5 Kpa	26.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top
(10 feet)	(30 psf)	(1810.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"
	2.5 Kpa	30.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(50 psf)	(2106.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	
	3.5 Kpa	35.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(70 psf)	(2403.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
4.E. motros	1 E 1/100	24.0	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5	2-10M @ 5.5	10M @ 5.5		
4.5 metres	(20 pcf)	34.8 (0206 7)	1-15M top	1-15M bot	1-15W top	1-15W top	1-2010 top	1-2010 top	2-15W top 2.15M bot	1-25W top		
(15 1661)	(au hai)	(2300.7)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"		
	2.5 Kna	40.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-10W @ 0.0	10101 @ 0.0		
	(50 psf)	(2806.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
	(····/	()	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"				
	3.5 Kpa	47.1	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top					
	(70 psf)	(3225.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.					
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
6.0 metres	1.5 Kpa	44.7	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
(20 feet)	(30 psf)	(3064.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"				
	2.5 Kpa	52.6	1-15M top	1-15M top	1-15M top	1-20M top						
	(50 pst)	(3606.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.						
	3.5 Kno	60.5	101VI @ 0.0	1-15M top	10101 @ 0.0	1.20M top						
	0.0 Kpd (70 nef)	(/1/0.6)	1-15M hot	1-15M hot	1-15M hot	1-20M hot						
	(10 p31)	(1140.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
7.5 metres	1.5 Kpa	54.4	1-15M top	1-15M top	1-15M top	1-20M top						
(25 feet)	(30 psf)	(3725.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.						
· · ·	,	· · /	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
-	2.5 Kpa	64.0	1-15M top	1-15M top	1-15M top							
	(50 psf)	(4383.9)	1-15M bot.	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"							
	3.5 Kpa	73.6	1-15M top	1-15M top	1-20M top							
	(70 psf)	(5041.9)	1-15M bot.	1-15M bot.	1-20M bot.							
0 matras	1.5 //no	67.5	10M @ 5.5	10M @ 5.5	10M @ 5.5							
(30 feet)	(30 nef)	(/628.9)	1-15M hot	1-15M hot	1-20M hot							
(001001)	(00 p31)	(4020.3)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"							
	2.5 Kpa	79.5	1-15M top	1-15M top								
	(50 psf)	(5451.4)	1-15M bot.	1-15M bot.								
			10M @ 5.5"	10M @ 5.5"								
	3.5 Kpa	91.5	1-15M top	1-15M top								
	(70 psf)	(6273.9)	1-15M bot.	1-15M bot.								
			10M @ 5.5"	10M @ 5.5"								
10.5 metres	1.5 Kpa	74.3	1-15M top	1-15M top	1-20M top							
(35 feet)	(30 pst)	(5095.8)	1-15M bot.	1-15M bot.	1-20M bot.							
	2.5. Kno	07.7	10M @ 5.5	10M @ 5.5	10M @ 5.5							
	2.3 Kµd (50 nef)	(6008.7)	1-15M bot	1-15M hot								
	(00 h2i)	(0000.7)	10M @ 5.5"	10M @ 5.5"								
	3.5 Kpa	101.0	1-15M top	1-15M top								
	(70 psf)	(6921.7)	1-15M bot.	1-15M bot.								
	/	. ,	10M @ 5.5"	10M @ 5.5"								
12 metres	1.5 Kpa	84.2	1-15M top	1-15M top								
(40 feet)	(30 psf)	(5773.0)	1-15M bot.	1-15M bot.								
			10M @ 5.5"	10M @ 5.5"								
	2.5 Kpa	99.3	1-15M top	1-15M top								
	(50 psf)	(6809.3)	1-15M bot.	1-15M bot.								
	0 E 1/20	114.5	10M @ 5.5"	10M @ 5.5"								
	3.5 Kpa (70 pcf)	114.5	1-15M top	1-20M bot								
	(ru psi)	(1040.1)	10M @ 5.5"	1-20W DUL 10M @ 5.5"								
1			101WI & J.J	10101 @ 0.0								



(203mm)

Lintel Width = 8" (203 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 5.5" = use two 10M stirrups @ 5.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			Carry	Linte	l Span - Metres	(feet)		•			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	26.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
(10 feet)	(30 psf)	(1832.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"		
	2.5 Kpa	31.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top		
	(50 psf)	(2128.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.		
	0.5.1/22	05.4	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"		
	3.3 Kµa (70 pcf)	(2424.2)	1-15M hot	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-20101 t0p	1-20101 t0p	2-15W top 2-15M bot	1-25W bot		
	(70 psi)	(2424.2)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"		
4.5 metres	1.5 Kpa	35.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
(15 feet)	(30 psf)	(2407.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"		
	2.5 Kpa	41.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top			
	(50 psf)	(2827.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"			
	3.5 Kpa	47.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top				
	(70 pst)	(3246.9)	1-15WI DOL 10M @ 7"	1-15IVI DOL.	1-15IVI DOL.	1-15W DOL 10M @ 7"	1-20₩ DOL 10M @ 7"	1-20₩ DOL 10M @ 7"	2-15WI DOL 2 10M @ 7"				
6.0 metres	1.5 Kna	45.0	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-10W @ 7				
(20 feet)	(30 nsf)	(3085.2)	1-15M hot	1-15M bot	1-15M bot	1-15M bot	1-20M hot	1-20M hot	2-15M hot				
(201001)	(00 poi)	(0000.2)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"				
	2.5 Kpa	52.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top					
	(50 psf)	(3628.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"					
	3.5 Kpa	60.9	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top						
	(70 psf)	(4170.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.						
7 E matros	1 E Vpa	E4 7	10M @ /	10M @ /	10M @ /	10M @ /	10M @ /	0 1EM top					
(25 feet)	1.0 Kµa (30 ncf)	04.7 (3747.1)	1-15W top	1-15M bot	1-15M bot	1-15M bot	1-20101 t0p	2-15W top 2-15M bot					
(201001)	(00 p31)	(0141.1)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"					
	2.5 Kpa	64.3	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	i din o i					
	(50 psf)	(4405.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"						
	3.5 Kpa	73.9	1-15M top	1-15M top	1-15M top	1-20M top							
	(70 psf)	(5063.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
0 matras	1 E 1/20	67.0	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
(20 feet)	1.0 Kµa (30 ncf)	07.0	1-15W top	1-15M bot	1-15M bot	1-20M bot							
(00 1001)	(00 p31)	(4000.1)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
	2.5 Kpa	79.8	1-15M top	1-15M top	1-15M top								
	(50 psf)	(5472.6)	1-15M bot.	1-15M bot.	1-15M bot.								
			10M @ 7"	10M @ 7"	10M @ 7"								
	3.5 Kpa	91.8	1-15M top	1-15M top	1-15M top								
	(70 psf)	(6295.1)	1-15M bot.	1-15M bot.	1-15M bot.								
10.5 motroe	1.5 Km	74.7	1UM @ /	10M @ /	10M @ /	1-20M top							
(25 feet)	1.0 Kµa (30 ncf)	(5117.0)	1-15M hot	1-15M bot	1-15M bot	1-20M bot							
(55 1661)	(00 h2i)	(3117.0)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
	2.5 Kpa	88.0	1-15M top	1-15M top	1-20M top								
	(50 psf)	(6029.9)	1-15M bot.	1-15M bot.	1-20M bot.								
			10M @ 7"	10M @ 7"	10M @ 7"								
	3.5 Kpa	101.3	1-15M top	1-15M top	1-20M top								
	(70 psf)	(6942.9)	1-15M bot.	1-15M bot.	1-20M bot.								
10	1 E V	04.5	10M @ 7"	10M @ 7"	10M @ 7"								
12 INETIES	1.5 Kpa (30 pof)	04.0 (5704.0)	1-15M top	1-15M bot	1-20M bot								
(40 1861)	(ou hei)	(3/34.2)	1°15101.00L. 10M @ 7″	10M @ 7"	1-20₩ DOL 10M @ 7"								
	2.5 Kna	99.7	1-15M ton	1-15M top									
	(50 psf)	(6830.6)	1-15M bot.	1-15M bot.									
	/	. ,	10M @ 7"	10M @ 7"									
	3.5 Kpa	114.8	1-15M top	1-15M top									
	(70 psf)	(7866.9)	1-15M bot.	1-15M bot.									
			10M @ 7"	10M @ 7"									





Lintel Width = 8" (203 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 7" = use two 10M stirrups @ 7" 0/C

* check applicability limits table A1.2 in appendix A to use this chart



(254mm

10 ~

Floor Clear	Ground enow	Total Eactored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Span	load	Uniform Load			Garry	Linte	Span - Metres	(feet)		•				
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)			
3 metres	1.5 Kpa	26.7	2-15M top	1-25M top	2-20M top	1-30M top								
(10 feet)	(30 psf)	(1832.0)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.								
	0.5.16	01.0	2-10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"								
	2.5 Kpa	31.0	1-25M top	2-20M top										
	(ou hei)	(2120.1)	1-25WI DUL. 10M @ 7"	2-20W DOL 2-10M @ 7"										
	3 5 Kna	35.4	2-20M ton	2-10WI @ 7										
	(70 psf)	(2424.2)	2-20M bot.											
	/	. ,	2-10M @ 7"											
4.5 metres	1.5 Kpa	35.1	2-20M top											
(15 feet)	(30 psf)	(2407.9)	2-20M bot.											
	0.5.1/		2-10M @ 7"											
	2.5 Kpa	41.3												
	(ou psi)	(2827.4)												
	3.5 Kpa	47.4												
	(70 psf)	(3246.9)												
	(• • •)	()												
6.0 metres	1.5 Kpa	45.0												
(20 feet)	(30 psf)	(3085.2)												
	2.5 Kpa	52.9												
	(50 pst)	(3628.0)												
	3.5 Kna	60.9												
	(70 psf)	(4170.9)												
	(()												
7.5 metres	1.5 Kpa	54.7												
(25 feet)	(30 psf)	(3747.1)												
	2.5 Kpa	64.3												
	(50 pst)	(4405.1)												
	3 5 Kna	73.9												
	(70 psf)	(5063.1)												
	(• • •)	(,												
9 metres	1.5 Kpa	67.8												
(30 feet)	(30 psf)	(4650.1)												
		70.0												
	2.5 Kpa	(9.8												
	(ou psi)	(0472.0)												
	3.5 Kpa	91.8												
	(70 psf)	(6295.1)												
	,	× ,												
10.5 metres	1.5 Kpa	74.7												
(35 feet)	(30 psf)	(5117.0)												
	0.5.1/	00.0												
	2.5 Kpa	0.88												
	(ou hei)	(0029.9)												
	3.5 Kpa	101.3												
	(70 psf)	(6942.9)												
	/													
12 metres	1.5 Kpa	84.5												
(40 feet)	(30 psf)	(5794.2)												
	0.5.10	00.7												
	2.5 Kpa	99.7 (6820 E)												
	(ou hai)	(0030.0)												
	3.5 Kpa	114.8												
	(70 psf)	(7866.9)												



(254mm)

10 ~



Lintel Width = 8" (203 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 2-10M @ 7" = use two 10M stirrups @ 7" O/C

FI 01	0		Minimum Reinforcement for Lintels in Load Bearing Walls										
Floor Clear	Ground snow	Iotal Factored			Carry	ng Second S	torey Wood I	Frame + Ligh	t Frame Roo	T			
opan metres (feet)	Kna (nef)	KN/m (lhs/ft)	0.0 m (3.ft)	1 2 m (4 ft)	15m (5ft)	1.8 m (6 ft)	2 1 m (7 ft)	2 / m (8 ft)	2.7 m (0.ft)	3.0 m (10 ft)	3 3 m (11 ft)		
3 metres	1.5 Kna	27.3	1-15M ton	1-15M ton	1-15M top	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-20M ton		
(10 feet)	(30 nsf)	(1874.5)	1-15M hot	1-15M hot	1-15M bot	1-15M bot	1-15M hot	1-15M hot	1-15M bot	1-15M hot	1-20M hot		
(101000)	(00 poi)	(107.110)	no stirruns	no stirruns	no stirruns	no stirruns	no stirruns	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	31.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
	(50 psf)	(2170.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
	((,	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	3.5 Kpa	36.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
	(70 psf)	(2466.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
			no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
4.5 metres	1.5 Kpa	35.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
(15 feet)	(30 psf)	(2450.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
			no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	41.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
	(50 psf)	(2869.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
			no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa	48.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(70 psf)	(3289.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"		
6.0 metres	1.5 Kpa	45.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top		
(20 feet)	(30 psf)	(3127.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.		
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	2.5 Kpa	53.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(50 pst)	(3670.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
	0.5.1/	04.5	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"		
	3.5 Kpa	61.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top			
	(70 pst)	(4213.3)	1-15M DOT.	1-15M DOT.	1-15M DOT.	1-15M DOT.	1-15M DOT.	1-20M DOT.	2-15M DOT.	1-25M DOT.			
7.5	1 E Kaa	FF 0	no stirrups	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	2-10M @ 9.5	10M @ 9.5	1.0514.444		
7.5 metres	1.5 Kpa	00.0	1-15IVI top	1-15W top	1-15W top	1-15IVI top	1-15W top	1-20101 top	2-15W top	2-15W top	1-25W top		
(20 1661)	(30 psr)	(3789.6)	I-IOW DOL	I-ISIVI DOL	1-15IVI DOL.	1-15IVI DOL.	1-15WI DOL.	1-20101 DOL.	2-15WI DOL	2-15WI DOL.	1-2010 DOL		
	2.5.Kpg	64.0	1 15M top	1 15M top	1 15M top	10101 @ 9.5	1 20M top	1 20M top	2-10W @ 9.5	2-10101 @ 9.5	10101 @ 9.5		
	2.0 Kµd (50 pcf)	(44.5	1 15M bot	1 15M bot	1 15M bot	1 15M bot	1-20W top	1-2010 top	2-15W top				
	(ou hei)	(4447.0)	no stirrups	1-15W DOL 10M @ 0.5"	1-15W DUL 10M @ 0.5"	1-15IW DUL. 10M @ 0.5"	1-20101 DOL.	1-20101 DOL.	2-10M @ 0.5				
	3.5 Kna	74.5	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-20M ton	2-15M ton	2-10101 @ 0.0				
	(70 nsf)	(5105.5)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot					
	(10 por)	(0100.0)	no stirruns	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5					
9 metres	1.5 Kpa	68.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top				
(30 feet)	(30 psf)	(4692.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.				
(,	(******	(no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"				
	2.5 Kpa	80.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top					
	(50 psf)	(5515.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"					
	3.5 Kpa	92.5	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top						
	(70 psf)	(6337.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.						
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"						
10.5 metres	1.5 Kpa	75.3	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top					
(35 feet)	(30 psf)	(5159.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"					
	2.5 Kpa	88.6	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top						
	(50 psf)	(6072.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.						
		1017	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	3.5 Kpa	101.9	1-15M top	1-15M top	1-15M top	1-20M top							
	(70 pst)	(6985.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
10	4.5.4	05.0	10M @ 9.5	10M @ 9.5	10M @ 9.5"	10M @ 9.5"	1.00211						
12 metres	1.5 Kpa	80.2 (F000 7)	I-IONICOP	1-15M TOP	I-IOM TOP	1-201VI TOP	1-20M TOP						
(40 TEET)	(30 pst)	(၁୪୬୨୮)	I-IDU IVICI.	1-15/U DOL.	1-101 DOT.	1-2UIVI DOT.	1-2UIVI DOT.						
	0.5.Voo	100.0	1 15M top	1 15M top	1 16M top	1 20M top	IUWI @ 9.5						
	2.5 Kpa	100.3	1 15M bot	1 15M bot	1-15M top	1-201VI top							
	(ou hei)	(00/3.0)	10M @ 0.5"	10M @ 0.5"	10M @ 0.5"	1-2010 DUL.							
	3.5 Kna	115.4	1-15M ton	1-15M ton	1-15M ton	1-20M ton							
	(70 nef)	(7909.3)	1-15M hot	1-15M hot	1-15M hot	1-20M hot							
	(10 hai)	(1000.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"							



(355mm)

4



Lintel Width = 8" (203 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load				Linte	l Span - Metres	(feet)					
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)		
3 metres	1.5 Kpa	27.3	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	1-25M+1-15M top	2-25M top		
(10 feet)	(30 psf)	(1874.5)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-15M bot.	2-25M bot.		
			10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	2.5 Kpa	31.7	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	2-25M top	2-25M top			
	(50 psf)	(2170.6)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.			
			2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"			
	3.5 Kpa	36.0	2-15M top	1-25M top	2-2010 top	2-2010 top	1-25M+1-15M top						
	(70 pst)	(2466.7)	2-15M DOT.	1-25M DOT.	2-2010 DOT.	2-2010 DOT.	1-25M+1-15M DOT.						
4.5 matros	1.5.Kpg	25.0	2-10W @ 9.5	1 05M top	2-10W @ 9.5	2-10W @ 9.5	2-10M @ 9.5						
4.5 metres (15 feet)	(30 ncf)	(2450 4)	2-15W top 2-15M bot	1-25M hot	2-2010 top 2-2010 hot	2-2010 top	1-25M+1-15M top						
(13 1661)	(50 psi)	(2430.4)	2-10M @ 9.5"	10M @ 9.5"	2-20W DOL 2-10M @ 9.5"	2-20W DOL 2-10M @ 9.5"	2-10M @ 9.5"						
	2 5 Kna	41.9	1-25M ton	2-20M ton	1-30M ton	2 1011 8 3.5	2 1001 @ 0.0						
	(50 nsf)	(2869.9)	1-25M hot	2-20M hot	1-30M hot								
	(00 poi)	(2000.0)	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"								
	3.5 Kpa	48.0	1-25M top	2-20M top									
	(70 psf)	(3289.3)	1-25M bot.	2-20M bot.									
	,	· · /	10M @ 9.5"	2-10M @ 9.5"									
6.0 metres	1.5 Kpa	45.6	1-25M top	2-20M top									
(20 feet)	(30 psf)	(3127.7)	1-25M bot.	2-20M bot.									
			10M @ 9.5"	2-10M @ 9.5"									
	2.5 Kpa	53.6											
	(50 psf)	(3670.)											
	3.5 Kna	61.5											
	(70 nef)	(4213 3)											
	(10 poi)	(1210.0)											
7.5 metres	1.5 Kpa	55.3											
(25 feet)	(30 psf)	(3789.6)											
	2.5 Kpa	64.9											
	(50 psf)	(4447.6)											
	3.5 Kpa	74.5											
	(70 psf)	(5105.5)											
0 matros	1 E Vpa	60 F											
9 metres	1.5 Kpa	06.0											
(SU leet)	(au hai)	(4092.0)											
	2 5 Kna	80.5											
	(50 nsf)	(5515.1)											
	(** ***)	(
	3.5 Kpa	92.5											
	(70 psf)	(6337.6)											
10.5 metres	1.5 Kpa	75.3											
(35 feet)	(30 psf)	(5159.4)											
	2.5 Kpa	88.6											
	(50 pst)	(60/2.4)											
	2.5. Kpp	101.0											
	0.0 Nµa (70 nef)	(6085 3)											
	(10 h2l)	(0303.3)											
12 metres	1.5 Kna	85.2											
(40 feet)	(30 nsf)	(5836.7)											
(· ·····)	(··· F=·)	(
	2.5 Kpa	100.3											
	(50 psf)	(6873.0)											
	3.5 Kpa	115.4											
	(70 psf)	(7909.3)											



14 ~



Lintel Width = 8" (203 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Elear Clear	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls									
Snan	load	Iniform Load			Carry	ng secona s Linte	i Snan - Metres	-rame + Lign (feet)	t Frame Roo	T		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	28.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(10 feet)	(30 psf)	(1916.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	
	2.5 Kpa	32.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2213.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
	0.5.1/	00.0	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	
	3.5 Kpa (70 psf)	30.0	1-20IVI top	1-20M top	1-20M bot	1-20M bot	1-20M top	1-20IVI top	1-20M bot	1-20M bot	1-20IVI top	
	(70 psi)	(2009.1)	no stirruns	no stirruns	no stirruns	no stirruns	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	
4.5 metres	1.5 Kpa	36.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(15 feet)	(30 psf)	(2492.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	
	2.5 Kpa	42.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2912.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
	0.5.1/	10.0	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	
	3.5 Kpa	48.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(70 psi)	(3331.0)	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL. 10M @ 12"	1-20101 DOL.	1-20W DOL 10M @ 12"	1-20101 DOL 10M @ 12"	1-20101 DOL.	1-20W DOL 10M @ 12"	
6.0 metres	1.5 Kna	46.3	1-20M ton	1-20M top	1-20M top	1-20M top	1-20M ton	1-20M ton	1-20M top	1-20M ton	1-20M ton	
(20 feet)	(30 psf)	(3170.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
. ,	/	· · /	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	
	2.5 Kpa	54.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
	(50 psf)	(3712.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
			no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	
	3.5 Kpa	62.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	
	(70 pst)	(4200.8)	1-20W DOL	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL.	2-10W DOL 2.10M @ 12"	
7.5 metres	1.5 Kna	55.9	1-20M ton	1-20M ton	1-20M top	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-10M @ 12	
(25 feet)	(30 psf)	(3832.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
(,	((,	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	
	2.5 Kpa	65.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	
	(50 psf)	(4490.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	
	3.5 Kpa	(5.1	1-20101 top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	
	(70 psi)	(3140.0)	no stirruns	no stirruns	1-201W DOL.	1-201WI DUL. 10M @ 12"	10M @ 12"	1-20W DOL 10M @ 12"	2-10M @ 12"	2-10M @ 12"	1-25W DOL 10M @ 12"	
9 metres	1.5 Kpa	69.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	
(30 feet)	(30 psf)	(4735.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	
	,	. ,	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	
	2.5 Kpa	81.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	
	(50 psf)	(5557.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	
	0.5.1/	00.1	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	
	3.5 Kpa (70 psf)	93.1	1-20IVI top	1-20M top	1-20M bot	1-20M bot	1-20M top	1-20IVI top	2-15W top	1-25W t0p	1-30101 top	
	(70 psi)	(0300.0)	no stirruns	10M @ 12 5"	1-20W DOL 10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	1-25W DOL 10M @ 6"	10M @ 6"	
10.5 metres	1.5 Kpa	75.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-25M top	
(35 feet)	(30 psf)	(5201.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M bot.	
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 6"	
	2.5 Kpa	89.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(50 psf)	(6114.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
	0.E. Kno	100.5	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	10M @ 6	2-10M @ 6	
	(70 nef)	(7027.8)	1-20M top	1-20M hot	1-20M bot	1-20M hot	1-20M hot	2-15M top 2-15M hot	1-25W top	2-2010 top 2-2010 hot	1-25M+1-15M	
	(10 hol)	(1021.0)	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"	
12 metres	1.5 Kpa	85.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
(40 feet)	(30 psf)	(5879.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 6″	2-10M @ 6"	
	2.5 Kpa	100.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	1-25M+1-15M	
	(50 psf)	(6915.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M	
	3.5 Kna	116.0	1-20M ton	10WI@12 1-20M ton	10WI @ 12 1-20M ton	10WI @ 12 1-20M ton	10WI @ 12 1-20M ton	2-10W @ 12 2-15M ton	10101 @ b 2-20101 ton	2-10₩ @ b 1-25M+1-15M top	2-101/1@b 2-25M ton	
	(70 nsf)	(7951.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-20M bot.	1-25M+1-15M bot	2-25M bot.	
	V - P=-/	(no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	



(452mm

°.

2.



Lintel Width = 8"(203 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20 top = top rebar 1-20 bot.= bottom rebar

2-10M @ 6" = use two 10M stirrups @ 6" 0/C"

Image: problemUNEXPERSION UNEXPERSION UNE	Eloor Cloor	Ground onor:	Total Eastared	Minimum Reinforcement for Lintels in Load Bearing Walls									
emere tenjoint of ten (1)36 m (2)36 m (2)56 m (2)<	Span	load	Uniform I nad			Carryi	ng secona S	Span - Metres	-rame + Ligh (feet)	rrame Koo	•		
Sharing (1) Singl (1) Singl (1) Singl (2) S	metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)	
Interpress Interpress <thinterpres< th=""> Interpress Interpress</thinterpres<>	3 metres	1.5 Kpa	28.0	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	
Image: start is a sta	(10 feet)	(30 psf)	(1916.9)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	
1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1				10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	
[0]00] [0]000 [100000 [100000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [2000000 [20000000 [20000000 [20000000 <		2.5 Kpa	32.3	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	
8.4 (a) 8.6 (b) 9.00 (b) 9.20 (b) <		(ou psi)	(2213.0)	1-2010 DOL 10M @ 12"	1-20WI DOL 10M @ 12"	2-10W DOL 2-10M @ 12"	2-10M @ 12"	1-25WI DOL 10M @ 12"	2-20WI DOL 2-10M @ 12"	2-20W DOL 2-10M @ 12"	1-20WH1-10W DOL 2-10M @ 12"	1-25IVI+1-20IVI DOL 2-10M @ 12"	
01/07 02/08 <th< td=""><td></td><td>3 5 Kna</td><td>36.6</td><td>1-20M top</td><td>2-15M top</td><td>2-10W @ 12</td><td>1-25M ton</td><td>2-20M top</td><td>2-10W @ 12</td><td>1-25M+1-15M ton</td><td>1-25M+1-20M ton</td><td>2-1010 @ 12</td></th<>		3 5 Kna	36.6	1-20M top	2-15M top	2-10W @ 12	1-25M ton	2-20M top	2-10W @ 12	1-25M+1-15M ton	1-25M+1-20M ton	2-1010 @ 12	
Norme <th< td=""><td></td><td>(70 psf)</td><td>(2509.1)</td><td>1-20M bot.</td><td>2-15M bot.</td><td>2-15M bot.</td><td>1-25M bot.</td><td>2-20M bot.</td><td>2-20M bot.</td><td>1-25M+1-15M bot.</td><td>1-25M+1-20M bot.</td><td>2-25M bot.</td></th<>		(70 psf)	(2509.1)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	
45 met 15 key 8.44 5.40m 5.20m		· · · /	· · · ·	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	
(15) Final (15) (24) Conton (24) Conton (2 (24) Conto (2 (24) Conton (2 (24) Conto	4.5 metres	1.5 Kpa	36.4	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	1-25M+1-20M top	
1 1	(15 feet)	(30 psf)	(2492.8)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	
2.5 Note 4.2.3 (1) 4.2.0 mode 2.1.0 mode 2.2.0 mode 2.0.0 mode		0.5 Km	40.5	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	
Image: space		2.5 Kpa (50 ncf)	42.0	2-15M top 2-15M bot	2-15M top 2-15M bot	1-25M hot	2-20101 top 2-20101 bot	2-2010 top	1-25M+1-15M top	1-25M+1-20M top	2-25M hot	1-30M+1-25M top	
3 5 Gya 44.6 1 - 54 Mag 1 - 52 Mag 2 - 52 Mag 2 - 52 Mag 2 - 52 Mag 1 - 52 Mag 2 - 52 Mag		(30 hai)	(2012.0)	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-2010 DOL	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-2.0W DOL 2-10M @ 6"	2-10M @ 6"	
9 9 9311 bit		3.5 Kpa	48.6	2-15M top	1-25M top	2-20M top	1-30M top	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
Image: space		(70 psf)	(3331.8)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	
61 metra 15 kpa 25 kpa 55 kpa 225 kpb 75 kpa 225 kpb 75 kpa 225 kpb 75 kpa 55				2-10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	
(2) (2) (3) (3) (3) (3) (3) (3) (3) (3) (2) (3) (3) (3) (2) (3) (3) (3) (3) (3) (3) (3) (3) (3) (3)	6.0 metres	1.5 Kpa	46.3	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	
1 1 2 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	(20 feet)	(30 psf)	(3170.1)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	
Image: style in the s		2.5 Km	54.2	2-10M @ 12 1-25M top	10M @ 12	10M @ 12 2-20M top	2-10M @ 12 1-25M 1-15M top	2-10M @ 12 1-25M 1-20M top	2-10M @ 12 2-25M top	2-10M @ b 1-30M 1-25M top	2-10M @ b	2-10M @ 6	
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $		2.5 Kpa (50 nsf)	(3712.9)	1-25M hot	1-25M hot	2-2011 top 2-2011 hot	1-25M+1-15M hot	1-25M+1-20M hot	2-25M top	1-30M+1-25M hot	2-30M hot		
3.5 kga (0 per) 62.1 (425.5) 1-250 top 1-250 top		(00 por)	(0112.0)	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"		
(10) (10) (10) (12) (12) (12) (12) (12) (12) (12) (12		3.5 Kpa	62.1	1-25M top	2-20M top	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
Image: state in the s		(70 psf)	(4255.8)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
7.5 metrics 1.5 kpa 65.9 1-20 M kp 2-20 M kp 1-30 M kp 1-20 M-120 M kp 2-20 M kp 1-30 M kp 2-20 M kp 2-20 M kp 1-30 M kp 2-20 M kp 2-20 M kp 1-30 M kp 2-20 M kp 2-20 M kp 2-30 M kp <				10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"			
(c)	7.5 metres	1.5 Kpa	55.9	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top		
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$	(25 feet)	(30 pst)	(3832.0)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.		
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $		2.5 Kna	65.5	2-20M ton	2-10M @ 12	1.25M+1.20M ton	2-101/1 @ b 2-25M top	2-10₩ @ b 1-30M±1-25M top	2-10W @ b	2-10WI@0	2-10WI@0		
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		(50 psf)	(4490.0)	2-20M top	1-30M bot.	1-25M+1-20M top	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.				
3.5 Kpa (70 psf) 75.1 (518.4) 2.20 M top 2.20 M tot 1.22M + 120 M tot 2.20 M tot 1.22M + 150 M tot 1.2		(** •••)	(,	2-10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
$ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$		3.5 Kpa	75.1	2-20M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $		(70 psf)	(5148.0)	2-20M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
9 metres (30 pet) 1.5 kpa (4730) 69.1 2.20M top (4730) 1.25M+1-15M top (2.20M tob (2.20M tob (2.				2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"					
(a) field (a) field <t< td=""><td>9 metres</td><td>1.5 Kpa</td><td>69.1</td><td>2-20M top</td><td>1-25M+1-15M top</td><td>1-25M+1-20M top</td><td>2-25M top</td><td>1-30M+1-25M top</td><td>2-30M top</td><td></td><td></td><td></td></t<>	9 metres	1.5 Kpa	69.1	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
10.5 metro 1.25Min = 1/2	(30 teet)	(30 pst)	(4/35.0)	2-20M DOT.	1-25W+1-15W DOT. 2 10M @ 6"	1-25W+1-2UW DOT. 2 10M @ 6"	2-25W DOT.	1-30IM+1-25IM DOT. 2 10M @ 6″	2-30W DOT.				
$ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$		2.5 Kna	81.1	1-25M+1-15M top	1-25M+1-20M ton	2-1010 @ 0	1-30M+1-25M ton	2-30M top	2*10WI@0				
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		(50 psf)	(5557.5)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
3.5 Kpa 93.1 1-25M+1-20M top 2-25M top 1-30M+1-25M top 2-30M top		, . ,	, <i>,</i>	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"					
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $		3.5 Kpa	93.1	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top						
10.5 metres (35 feet) 1.5 kpa (30 pst) 75.9 (5201.9) 1-25M+1-15M to 1-25M+1-15M to -101M @ 6" 2-10M @ 6" 2-30M top 2-25M tob 2-30M tob		(70 psf)	(6380.0)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
10.5 metres 1.5 kpa 7.5.9 1-25M+1-5M top 1-25M+1-20M top 2-25M top 1-30M+1-25M top 2-30M top (35 feet) (30 pst) (501.9) 1-25M+1-15M tot 1-25M+1-20M top 2-25M top 1-30M+1-25M top 2-30M top 2-30M top 2.5 kpa 89.2 1-25M+1-20M tot 2-25M top 1-30M+1-25M tot 2-30M top	105	4.5.10	75.0	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	0.00141					
$ \left(30 \text{ fest} \right) = \left(\begin{array}{c} 100 \text{ gest} \\ 1 \text{ s}^{2} \text{ s}^{1} \text{ s}^{2} \text{ s}^{2} \text{ s}^{2} \text{ s}^{2} \text{ s}^{1} \text{ s}^{2} \text{ s}^{1} \text{ s}^{2} \text{ s}^{1} \text{ s}^{2} \text{ s}^{2$	10.5 metres	1.5 Kpa (20 nof)	(5.9	1-25M+1-15M top	1-25M+1-20M top	2-25M top 2.25M bot	1-30M+1-25M top	2-30M top					
12 meres (40 feet) 1.5 Kpa (50 psf) 85.8 (50 psf) 1-25M+1-15M tot (14.8) 2-25M tot 1-30M+1-25M tot 2-25M tot 1-30M+1-25M tot 2-10M @ 6" 2-30M tot 2-30M tot 2-10M @ 6" 2-30M tot 2-30M tot 2-10M @ 6" 12 meres (40 feet) 1.5 Kpa (30 psf) 85.8 (50 psf) 1-25M+1-15M tot 2-25M tot 2-25M tot 2-25M tot 2-30M tot 2-30M tot 2-10M @ 6" 2-30M tot 2-30M tot 2-10M @ 6" 2-30M tot 2-30M tot 2-30M tot 2-10M @ 6" 2-10M @ 6" 2-10M @ 6" 2-10M @	(55 1661)	(50 p31)	(3201.3)	2-10M @ 6"	2-10M @ 6"	2-25W DOL 2-10M @ 6"	2-10M @ 6"	2-30W DOL 2-10M @ 6"					
(50 psf) (6114.8) 1-25M+1-20M bob. 2-25M bob. 1-30M+1-25M bob. 2-30M bob. 2-10M @ 6" 2-10M		2.5 Kpa	89.2	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	LIUMOU					
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		(50 psf)	(6114.8)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
3.5 Kpa (70 pst) 102.5 (70 pst) 2-25M top (70 Q77.8) 1-30M+1-25M top 2-25M top 2-30M top 2-10M @ 6" 2-30M top 12 metres (40 feet) 1.5 Kpa (30 pst) 65.8 (5879.1) 1-25M+1-15M top 2-25M top 1-30M+1-25M top 2-30M top 2.10M @ 6" 2-10M @ 6" 2-10M @ 6" 2-30M top 2-30M top 2-30M top 2.6 Kpa 10.9 (5879.1) 1-25M+1-15M tot 2-10M @ 6" 2-25M tot 1-30M+1-25M tot 2-30M top 2.5 Kpa 100.9 (6915.5) 2-25M top 1-30M+1-25M tot 2-30M top 2-30M top 2.5 Kpa 116.0 2-230M top 2-30M top 2-30M top 2-30M top 3.5 Kpa 116.0 2-30M top 2-30M tot 2-30M tot 2-30M tot 2.7 10M @ 6" 2-30M top 2-30M tot 2-30M tot 2-10M @ 6" 2-10M @ 6" 3.5 Kpa 116.0 2-30M tot 2-30M tot 2-30M tot 2-30M tot 2-30M tot 2-30M tot 2.7 10M @ 6" 2-10M @ 6" <				2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
(70 pst) (70 27.8) 2-25M bot. 2-10M @6" 2-30M bot. 2-10M @6" 2-30M bot. 2-30M @6" 2-30M top 12 metres (40 feet) 1.5 Kpa 85.8 1-25M+1-15M top 2-25M top 1-30M+1-25M top 2-30M top 2.40 @6" 2-10M @6" 2-10M @6" 2-10M @6" 2-30M top 2-30M top (40 feet) (30 pst) (5879.1) 1-25M top 2-25M top 1-30M+1-25M top 2-30M top 2.5 Kpa 100.9 2-25M top 1-30M+1-25M top 2-30M top 2-30M top 2.5 Kpa 100.9 2-25M top 1-30M+1-25M top 2-30M top 2-30M top 2.10M @6" 2-10M @6" 2-10M @6" 2-10M @6" 2-10M @6" 2-10M @6" 3.5 Kpa 116.0 2-30M top 2-10M @6" 2-10M @6"<		3.5 Kpa	102.5	2-25M top	1-30M+1-25M top	2-30M top							
12 metres 1.5 Kpa 85.8 1-25M+1-15M top 2-25M top 1-30M+1-25M top 2-30M top		(70 psf)	(7027.8)	2-25M bot.	1-30M+1-25M bot.	2-30M bot.							
It metres It stype 00.0 It stype 00.0 It stype 220m top It stype 230m top 23	10 motroe	1.5 Koo	0 3 <u>0</u>	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-30M top						
(c) f(x)	(40 feet)	(30 nsf)	(5879.1)	1-25M+1-15M hot	2-2511 top 2-25M hot	1-30M+1-25M bot	2-30W top 2-30M hot						
2.5 Kpa 100.9 2.25M top 1:30M+1:25M top 2:30M top (50 psf) (6915.5) 2:25M bot 1:30M+1:25M bot 2:30M bot 2.10M @ 6" 2:10M @ 6" 2:10M @ 6" 2:30M bot 3.5 Kpa 116.0 2:30M top 2:30M top (70 psf) (7951.8) 2:30M bot 2:30M bot 2:10M @ 6" 2:10M @ 6" 2:10M @ 6"	10 1001)	(oo hoi)	(0010.1)	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
(50 psf) (6915.5) 2-25M bot. 2-10M @ 6" 2-30M bot. 2-10M @ 6" 2-30M bot. 2-10M @ 6" 3.5 Kpa 116.0 2-30M top 2-30M top 2-30M top (70 psf) (7951.8) 2-30M bot. 2-10M @ 6" 2-30M bot. 2-30M bot. 2-10M @ 6" 2-30M bot. 2-30M bot. 2-30M bot. 2-30M bot.		2.5 Kpa	100.9	2-25M top	1-30M+1-25M top	2-30M top							
2-10M @ 6" 2-10M @ 6" 2-10M @ 6" 3.5 Kpa 116.0 2-30M top 2-30M top (70 psf) (7951.8) 2-30M bot. 2-30M bot. 2-10M @ 6" 2-10M @ 6" 2-10M @ 6"		(50 psf)	(6915.5)	2-25M bot.	1-30M+1-25M bot.	2-30M bot.							
3.5 Kpa 116.0 2-30M top 2-30M top (70 psf) (7951.8) 2-30M bot. 2-30M bot. 2-10M @ 6" 2-10M @ 6" 2-10M @ 6"				2-10M @ 6"	2-10M @ 6"	2-10M @ 6"							
(/U pst) (7951.8) 2-30M bot. 2-30M bot. 2-10M @ 6" 2-10M @ 6"		3.5 Kpa	116.0	2-30M top	2-30M top								
2-10M @ 0 2-10M @ 0		(70 psf)	(7951.8)	2-30M bot.	2-30M bot.								
				2-10M @ b	2-1UM @ b								





Lintel Width = 8"(203 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20 top = top rebar 1-20 bot.= bottom rebar

2-10M @ 6" = use two 10M stirrups @ 6" 0/C"

Elear Clear	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls									
Snan	load	Iniform Load			Carryi	ng secona s Linte	Snan - Metres	<pre>'rame + Lign (feet)</pre>	t Frame Roo	T		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	28.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(10 feet)	(30 psf)	(1959.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	
	2.5 Kpa	32.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2255.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
		07.0	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	
	3.5 Kpa	37.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(70 pst)	(2551.6)	1-20W DOT.	1-20M DOL	1-20IVI DOT.	1-20M DOT.	1-20M DOT.	1-20IVI DOT.	1-2010 DOT.	1-20101 DOT.	1-20101 DOT.	
4.5 metres	1.5 Kna	37.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(15 feet)	(30 nsf)	(2535.3)	1-20M top	1-20M top	1-20M hot	1-20M top	1-20M top	1-20M top	1-20M top	1-20M hot	1-20M top	
(101000)	(00 poi)	(2000.0)	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	
	2.5 Kpa	43.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2954.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	
	3.5 Kpa	49.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(70 psf)	(3374.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	
6.0 metres	1.5 Kpa	46.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(20 feet)	(30 pst)	(3212.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
	2.5.Kpg	54.9	1 20M top	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	
	2.0 Kµd (50 ncf)	(2755 /)	1-20M hot	1-2010 top	1-2010 top	1-2010 top	1-2010 top	1-20101 top	1-20M hot	1-2010 top	1-20101 top 1-2010 hot	
	(50 psi)	(0700.4)	no stirruns	no stirruns	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	
	3.5 Kpa	62.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
	(70 psf)	(4298.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
	/	· · /	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	
7.5 metres	1.5 Kpa	56.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(25 feet)	(30 psf)	(3874.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	
	2.5 Kpa	66.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
	(50 psf)	(4532.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
	0.5.1/22	75 7	no stirrups	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	2-10M @ 15	
	3.5 Kpa (70 pcf)	/ 0. / (5100_4)	1-20IVI top	1-20M top	1-20M bot	1-20M top	1-20W top	1-20IVI top	1-20IVI top	2-15W top	2-15M top	
	(70 psi)	(3190.4)	no stirruns	no stirruns	no stirrups	10M @ 15"	1-2010 DOL 10M @ 15"	1-20W DOL 10M @ 15"	1-20W DOL 10M @ 15"	2-10M @ 15"	2-10M @ 15"	
9 metres	1.5 Kpa	69.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
(30 feet)	(30 psf)	(4777.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
. ,	,	. ,	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	
	2.5 Kpa	81.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	
	(50 psf)	(5600.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	
			no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	
	3.5 Kpa	93.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top	
	(70 pst)	(6422.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	
10.5 metrec	1.5 Kna	76.5	1-20M top	1-20M top	1.20M top	1-20M top	1-20M top	1.20M top	2-10W @ 15	2-10WI@ 15 2-15M top	2-10W @ 15 2-15M top	
(35 feet)	(30 nsf)	(5244.3)	1-20M top	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M top	2-15M hot	2-15M top 2-15M hot	
(00 1001)	(00 p31)	(3244.0)	no stirruns	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	89.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	
	(50 psf)	(6157.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	
		. ,	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
	3.5 Kpa	103.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(70 psf)	(7070.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	
12 metres	1.5 Kpa	86.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	
(40 feet)	(30 pst)	(5921.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	
	0.5.Vno	101 5	no stirrups	1 20M top	10W @ 15	1 00M top	1 00M top	1 00M top	10W @ 15	2-10W @ 15	10W @ 15	
	2.0 Nµa (50 nef)	(6057 0)	1-2014 LUP	1-2014 top	1-2014 top	1-201VI LUP 1-201M hot	1-201/1 LUP 1-201/1 hot	1-2014 LUP 1-2014 hot	2=151/1100 2=151/1 hot	1-25M hot	2=201VI LUP 2=201M bot	
	(oo hai)	(0001.0)	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	
	3.5 Kpa	116.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	2-20M top	1-25M+1-15M top	
	(70 psf)	(7994.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	2-20M bot.	1-25M+1-15M bot.	
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	



(553mm)

 $\dot{\Sigma}$

27



Lintel Width = 8" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 15" = use two 10M stirrups @ 15" O/C

	Owners di anno su	Total Fastered	Minimum Reinforcement for Lintels in Load Bearing Walls									
Floor Clear	Ground snow	Iotal Factored			Carryi	ng Second S	Lorey Wood I	Frame + Ligh	t Frame Roo	T		
opan metres (feet)	Kna (nsf)	KN/m (lhs/ft)	3.6 m (12 ft)	3 9 m (13 ft)	4 2 m (14 ft)	4.5 m (15 ft)	4 8 m (16 ft)	5 1 m (17 ft)	5 4 m (18 ft)	5 7 m (19 ft)	6 0 m (20 ft)	
3 metres	1.5 Kpa	28.6	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top	
(10 feet)	(30 psf)	(1959.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	
	,	. ,	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	
	2.5 Kpa	32.9	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	2-20M top	
	(50 psf)	(2255.5)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	2-20M bot.	
			10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	3.5 Kpa	37.2	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	
	(70 psf)	(2551.6)	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	
4.E matros	1.5.1/20	27.0	10M @ 15	10M @ 15	2-10M @ 15	2-10M @ 15	10M @ 15	10M @ 15	2-10M @ 15	2-10M @ 15	2-10M @ 15	
4.5 metres	(30 nef)	(2525.2)	1-2010 top	1-20101 top	2-15M top 2-15M bot	2-15W top 2-15M bot	1-25M hot	1-25M hot	2-2010 top	2-2014 top	1-25M+1-15M hot	
(10 1001)	(00 p31)	(2000.0)	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	43.1	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-15M top	1-25M+1-20M top	
	(50 psf)	(2954.8)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	
			10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	3.5 Kpa	49.2	1-20M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top	
	(70 psf)	(3374.2)	1-20M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	
			10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
6.0 metres	1.5 Kpa	46.9	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	
(20 teet)	(30 pst)	(3212.6)	1-20M DOL	2-15W DOT.	2-15M DOL	1-25M DOL 10M @ 15"	2-20W DOT.	2-20W DOT.	1-25M+1-15M DOL	1-25M+1-2UM DOL	2-25WI DOT.	
	2.5 Kna	54.8	2-15M ton	2-10W @ 15 2-15M ton	2-10W @ 15 1-25M ton	2-20M top	2-10W @ 15	2-10W @ 15 1-25M±1-20M ton	2-10W @ 15 2-25M ton	2-10WI@15 2-25M top	2-10W @ 15 1-30M±1-25M ton	
	(50 nsf)	(3755.4)	2-15M hot	2-15M hot	1-25M hot	2-20M hot	1-30M hot	1-25M+1-20M top	2-25M hot	2-25M hot	1-30M+1-25M top	
	(00 pai)	(0100.1)	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	
	3.5 Kpa	62.7	2-15M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
	(70 psf)	(4298.2)	2-15M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.	
			2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	
7.5 metres	1.5 Kpa	56.5	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	
(25 feet)	(30 psf)	(3874.5)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M top	
	0.5.1/	00.4	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	
	2.5 Kpa	66.1 (4522 5)	1-25M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top	
	(ou hei)	(4032.0)	1-25WI DUL 10M @ 15"	1-25WI DUL 10M @ 15"	2-20W DOL 2-10M @ 15"	1-25WI+1-15WI DUL. 2-10M @ 15"	1-25WI+1-20WI DOL 2-10M @ 7.5"	2-25WI DUL.	2-10M @ 7.5"	2-10M @ 7.5"	2-30WI DUL. 2-10M @ 7.5"	
	3.5 Kna	75.7	1-25M top	2-20M ton	1-25M+1-15M ton	1-25M+1-20M ton	2-100 @ 7.5	1-30M+1-25M ton	1-30M+1-25M ton	2-100 @ 7.5	2-10101 @ 7.5	
	(70 psf)	(5190.4)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	1-30M+1-25M top	2-30M bot.		
	(- 1 - 7	(****)	10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
9 metres	1.5 Kpa	69.7	1-25M top	2-20M top	2-20M top	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top		
(30 feet)	(30 psf)	(4777.5)	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.		
			10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
	2.5 Kpa	81.7	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
	(50 pst)	(5600.0)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.			
	3.5 Kna	03.7	2-10W @ 15	2-10W @ 7.5	2-10WI@7.5	2-10101@7.5	2-10W @ 7.5	2-10WI@7.5	2-10WI@7.5			
	(70 nsf)	(6422.5)	2-20M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top 2-30M hot				
	(10 por)	(0.122.0)	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
10.5 metres	1.5 Kpa	76.5	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top			
(35 feet)	(30 psf)	(5244.3)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.			
			10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"			
	2.5 Kpa	89.8	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
	(50 psf)	(6157.3)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.				
	0.5.1/	100.0	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	3.5 Kpa (70 psf)	(7070.2)	1-25W+1-15W t0p	1-25M+1-20M top	2-25W top	1-30IVI+1-25IVI top	2-30W top					
	(10 h21)	(1010.2)	2-10M @ 7.5"	2-10M @ 7 5"	2-2.5101 DUL. 2-10M @ 7.5"	2-10M @ 7 5"	2-3010 DUL 2-10M @ 7 5"					
12 metres	1.5 Koa	86.4	2-20M top	1-25M+1-15M ton	1-25M+1-20M ton	2-25M top	1-30M+1-25M ton	2-30M top				
(40 feet)	(30 psf)	(5921.6)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.				
. ,	/	. ,	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	2.5 Kpa	101.5	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
	(50 psf)	(6957.9)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.					
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa	116.6	1-25M+1-2UM top	2-25M top	1-30M+1-25M top	2-30M top						
	(70 psi)	(1994.3)	1-20WH+1-2UW DOL 2-10M @ 7.5"	2-20WI DOL 2-10M @ 7.5"	1-30101+1-23101 (0p 2-10M @ 7.5″	2-301VI DOL 2-10M @ 7.5"						
			L-IUNI & 1.0	2-10WW W 1.0	2-10WW @ 1.0	2-10WI @ 1.0						



 $\dot{\Sigma}$



Lintel Width = 8" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 15" = use two 10M stirrups @ 15" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Span	load	Uniform Load				Linte	l Span - Metres	(feet)						
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)			
3 metres	1.5 Kpa	26.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top			
(10 feet)	(30 psf)	(1837.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			no stirrups	no stirrups	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"			
	2.5 Kpa	31.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top	1-25M top			
	(50 psf)	(2133.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.			
			no stirrups	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"			
	3.5 Kpa	35.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(70 psf)	(2429.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
		05.0	no stirrups	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"			
4.5 metres	1.5 Kpa	35.2	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
(15 teet)	(30 pst)	(2413.2)	1-15M DOT.	1-15M DOT.	1-15M DOT.	1-15M DOT.	1-2010 DOT.	1-2010 DOT.	2-15M DOT.	1-25M DOT.	2-2010 DOT.			
	0.5.1/22	41.0	no stirrups	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5	2-10M @ 5.5	10M @ 5.5	2-10M @ 5.5			
	2.0 Kµa	41.0	1-15IVI LUP	1-TOWILUP	1-TOWILUP	1-15W LUP	1-20W top	2-10W LUP	1-20W LUP	2-20W top				
	(ou hei)	(2032.7)	1-10W DUL	1-10W @ 5.5"	1-10W @ 5.5"	1-15WI DUL.	1-20101 DUL.	2-15WI DUL.	1-20101 DUL.	2-20101 DUL.				
	2.5. Kpp	47.4	1 15M top	10101 @ 0.0	10101 @ 0.0	10101 @ 0.0	1 20M top	2-10W @ 0.0	10W @ 5.5	2-10WI@ 0.0				
	3.3 Kµd (70 pcf)	47.4	1 15M bot	1 15M bot	1 15M bot	1 15M bot	1-20W top	2-15W top 2.15M bot	2-2010 top					
	(70 psi)	(3232.2)	10M @ 5.5"	1-TJIW DUL 10M @ 5.5"	1-TJIW DUL 10M @ 5.5"	1-15IW DUL 10M @ 5.5"	1-201WI DUL.	2-10M @ 5.5"	2-20W DOL 2-10M @ 5.5"					
6.0 metres	1.5 Kna	/5.1	1-15M top	1-15M top	1-15M top	1-15M ton	1-20M top	2-10W @ 0.0	2-10W @ 5.5					
(20 feet)	(30 nef)	(3090 5)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot	2-20M hot					
(20 1661)	(50 psi)	(3030.3)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	2-20W DOL 2-10M @ 5.5"					
	2.5 Kna	53.0	1-15M ton	1-15M ton	1-15M ton	1-20M ton	2-15M ton	1-25M ton	2-10WI @ 0.0					
	(50 nsf)	(3633.3)	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot	1-25M hot						
	(50 p31)	(0000.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"						
	3.5 Kna	60.9	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	10111 0 0.0						
	(70 nsf)	(4176.2)	1-15M hot	1-15M bot	1-15M bot	1-20M bot	2-15M hot							
	(10 poi)	(111012)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"							
7.5 metres	1.5 Kpa	54.7	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top						
(25 feet)	(30 psf)	(3752.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.						
()	(** ***)	(0.01.1)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"	10M @ 5.5"						
	2.5 Kpa	64.3	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top							
	(50 psf)	(4410.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.							
	,	. ,	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"							
	3.5 Kpa	73.9	1-15M top	1-15M top	1-20M top	2-15M top								
	(70 psf)	(5068.4)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.								
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"								
9 metres	1.5 Kpa	67.9	1-15M top	1-15M top	1-15M top	2-15M top								
(30 feet)	(30 psf)	(4655.4)	1-15M bot.	1-15M bot.	1-15M bot.	2-15M bot.								
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"								
	2.5 Kpa	79.9	1-15M top	1-15M top	1-20M top									
	(50 psf)	(5477.9)	1-15M bot.	1-15M bot.	1-20M bot.									
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"									
	3.5 Kpa	91.9	1-15M top	1-15M top	1-20M top									
	(70 psf)	(6300.4)	1-15M bot.	1-15M bot.	1-20M bot.									
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"									
10.5 metres	1.5 Kpa	74.7	1-15M top	1-15M top	1-20M top	2-15M top								
(35 feet)	(30 pst)	(5122.3)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.								
	0.5.1/22	00.1	10M @ 5.5	10M @ 5.5	10M @ 5.5	2-10M @ 5.5								
	2.5 Kpa	00.1	1-15W top	1-15W top	1-20101 top									
	(ou hei)	(0035.2)	1-10W DUL	1-10W @ 5.5"	1-20101 DUL.									
	2.5. Kpp	101.4	1 15M top	10101 @ 0.0	10101 @ 0.0									
	0.0 r.µd (70 nef)	(60/12 2)	1-15M hot	1-15M bot										
	(10 h2l)	(0540.2)	10M @ 5.5"	10M @ 5.5"										
12 metres	1.5 Kna	84.6	1-15M ton	1-15M ton	1-20M ton									
(40 feet)	(30 nef)	(5700 6)	1-15M hot	1-15M hot	1-20M hot									
(10 1001)	(oo hai)	(0100.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"									
	2.5 Kna	99.7	1-15M ton	1-15M ton	10WI & J.J									
	(50 nsf)	(6835.9)	1-15M hot	1-15M hot										
	(00 por)	(0000.0)	10M @ 5.5"	10M @ 5.5"										
	3.5 Koa	114.9	1-15M top	1-20M top										
	(70 psf)	(7872.2)	1-15M bot.	1-20M bot										
	χ r· /	. /	10M @ 5.5"	10M @ 5.5"										



Lintel Width = 10" (254 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 5.5" = use two 10M stirrups @ 5.5" O/C

Nome Nome <th< th=""><th>Floor Clear</th><th>Ground snow</th><th>Total Factored</th><th colspan="11">Minimum Reinforcement for Lintels in Load Bearing Walls</th></th<>	Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls										
image (ap) image (bit)	Span	load	Uniform Load			j.	Linte	Span - Metres	(feet)		-			
3 artisping 1.5 Vigs (017) 2.8.4 (2010) 1.5 (2010) <th< th=""><th>metres (feet)</th><th>Kpa (psf)</th><th>KN/m (lbs/ft)</th><th>3.6 m (12 ft)</th><th>3.9 m (13 ft)</th><th>4.2 m (14 ft)</th><th>4.5 m (15 ft)</th><th>4.8 m (16 ft)</th><th>5.1 m (17 ft)</th><th>5.4 m (18 ft)</th><th>5.7 m (19 ft)</th><th>6.0 m (20 ft)</th></th<>	metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)		
Image: style	3 metres	1.5 Kpa	26.8	2-20M top	1-30M top	1-25M+1-20M top	- (-)	. (. ,	- ()	- (-)	- (- /			
1 S M 2 M 0 657 0	(10 feet)	(30 psf)	(1837.4)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.								
$2.5 4_{00}$ 3.11 3.040 3.044 3.040	()	(** •••)	(2-10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"								
$ \frac{1}{35 \text{ hum}} = \frac{1}{35 \text{ hum}} \cdot \frac{1}{35 $		2.5 Kpa	31.1	1-30M top	1-25M+1-20M top	2 1011 0 010								
Image: body state 100 as y = 2000 c s y		(50 nsf)	(2133.4)	1-30M hot	1-25M+1-20M hot									
15 Spa 354 1584-100 Mp single Signed Signe		(00 poi)	(2100.1)	10M @ 5.5"	2-10M @ 5.5"									
Image: state		3.5 Kna	35.4	1-25M+1-20M ton	2 10101 @ 0.0									
Image: second		(70 nsf)	(2429.5)	1-25M+1-20M hot										
		(70 p31)	(2423.3)	2-10M @ 5.5"										
I strain	A 5 matras	1.5 Kna	35.0	1-25M 1-20M top										
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $	(15 feet)	(30 ncf)	(2/12.2)	1-25M+1-20M bot										
$ \frac{23 \text{km}}{(200 \text{cm})} \frac{413}{(2022)} \text{cm} c$	(13 1661)	(50 p31)	(2413.2)	2 10M @ 5 5"										
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		2.5 Kna	<i>A</i> 1 3	2-10101 @ 0.0										
$ \frac{1}{100} \frac{1}{100} \frac{1}{1000} \frac{1}{10000} \frac{1}{100000} \frac{1}{1000000} \frac{1}{10000000000000000000000000000000000$		2.0 Kpd (60 nof)	(1000 7)											
35 Kp $47.4(C10 pr) 63 m Hz 451(20 km) 451(20 km) 451(25 Kp) 451(27 mm1/17) 15 Kp 619(17.2 mm2/17) 15 Kp 617(27 mm2/17) 15 Kp 617(25 Kp) 619(27 mm2/17) 617(27 mm2/17) 617(27 mm2/17) 617(27 mm2/17) 617(27 mm2/17) 611(27 mm2/17) 114(27 mm2/17) 114 (27 mm2/17) 114 (27 mm2/17) 114 (27 mm2/17) 114 (2$		(50 h21)	(2032.7)											
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $		0.5. Kno	47.4											
$ \frac{ c }{ c } = \frac{ c c }{ c } = \frac{ c c }{ c c } = \frac{ c c }{ c c } = \frac{ c c c }{ c c c } = \frac{ c c c c }{ c c c c c $		0.0 Kµa	47.4											
6.0 meters (00 berl) 15 Kga (00 pc) 46.1 (00 pc) 46.		(70 psi)	(3232.2)											
$ \begin{array}{ c c c c c c c c } \hline 0.0 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 $	6.0 matras	1.5.1/200	45.1											
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $	0.0 Illettes	1.5 Kµa	40.1 (0000 F)											
$ \frac{2.5 \text{ kps}}{(20 \text{ pf})} & \frac{3.3}{(25 \text{ kps})} & \frac{3.3}{(27 \text{ pf})} & \frac{3.5 \text{ kps}}{(417 \text{ k}, 2)} & \frac{3.5 \text{ kps}}{(25 \text{ kps})} & \frac{3.5 \text{ kps}}{(410 \text{ k})} & \frac{3.5 \text{ kps}}{(40 \text{ pf})} & \frac{3.5 \text{ kps}}{(410 \text{ k})} & \frac{3.5 \text{ kps}}{(40 \text{ pf})} & \frac{3.5 \text{ kps}}{(40 \text{ pf})} & \frac{3.5 \text{ kps}}{(40 \text{ k})} & \frac{3.5 \text{ kps}}{(40 \text{ pf})} & \frac{3.5 \text{ kps}}{(40 \text{ k})} & \frac{3.5 \text{ kps}}{(40 \text{ pf})} & \frac{3.5 \text{ kps}}{(40 \text{ k})} & 3.5$	(20 teet)	(30 pst)	(3090.5)											
$ \frac{25 \text{kg}}{(9 \text{sb})} \frac{530}{(983)} \text{cm} \text{cm} $		0.5.16	50.0											
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		2.5 Kpa	53.0											
$35 K_{00}$ 60.9 (70.9) 61.9 (70.9) 61.9 (70.9) (72.2)		(50 pst)	(3633.3)											
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$														
		3.5 Kpa	60.9											
7.5 metrs (25 test) 1.5 Kpa (30 psf) 54.7 (3752.4) 64.3 (4410.4) $$		(70 psf)	(4176.2)											
7.5 metres 1.5 kpa 54.3 (25 ket) $(20 pch)$ (3752.4) 2.5 kpa (739) (30 pch) (4410.4) 3.5 kpa 77.9 (70 pch) (5088.4) (30 pch) (655.4) 2.5 kpa 67.9 (30 pch) (4655.4) 2.5 kpa 77.9 (50 pch) (657.4) 2.5 kpa 77.9 (50 pch) (657.4) 2.5 kpa 77.9 (50 pch) (657.4) (30 pch) (650.4) 2.5 kpa 79.9 (30 pch) (650.4) (30 pch) (657.4) (30 pch) (657.4) (30 pch) (650.4) (30 pch) (650.2) 2.5 kpa 101.4 (70 pch) (650.2) 3.5 (ka) 101.4 (70 pch) 658.9 (30 pch) (658.5) (30 pch) (658.5) (30 pch) (685.2) (30 pch) (685.6) (30 pch)														
$ \frac{(25 \text{ke})}{(20 \text{ps})} \frac{(372.4)}{(440.4)} \qquad \qquad$	7.5 metres	1.5 Kpa	54.7											
$ \frac{25 \text{kg}}{(60 \text{ps})} \begin{array}{ c c c } \hline 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0$	(25 feet)	(30 psf)	(3752.4)											
$ \frac{2.5 \text{Kya}}{(50 \text{sf})} \frac{643}{(4410.4)} \\ = \frac{5.5 \text{Kya}}{(70 \text{sf})} \frac{73.9}{(5058.4)} \\ = \frac{15 \text{Kya}}{(70 \text{sf})} \frac{73.9}{(655.4)} \\ = \frac{15 \text{Kya}}{(20 \text{sf})} \frac{67.9}{(655.4)} \\ = \frac{2.5 \text{Kya}}{(70 \text{sf})} \frac{91.9}{(6455.4)} \\ = \frac{2.5 \text{Kya}}{(70 \text{sf})} \frac{91.9}{(6455.4)} \\ = \frac{15 \text{Kya}}{(70 \text{sf})} \frac{91.9}{(6300.4)} \\ = \frac{15 \text{Kya}}{(50 \text{sf})} \frac{74.7}{(60 \text{sf})} \\ = \frac{15 \text{Kya}}{(50 \text{sf})} \frac{74.7}{(60 \text{sf})} \\ = \frac{2.5 \text{Kya}}{(50 \text{sf})} \frac{74.7}{(60 \text{sf})} \\ = \frac{2.5 \text{Kya}}{(50 \text{sf})} \frac{74.7}{(60 \text{sf})} \\ = \frac{15 \text{Kya}}{(50 \text{sf})} \\ = \frac{15 \text{Kya}}{(50 \text{sf})} \frac{74.7}{(60 \text$														
$ \frac{60}{(70 1}{(70 1}} \left(\frac{60 1}{(70 1}} \right) \left(\frac{4410.4}{(70 1}} \right) \left(\frac{4410.4}{(70 1}} \right) \left(\frac{73.9}{(5068.4)} \right) \left(\frac{73.9}{(5068.4)} \right) \left(\frac{73.9}{(5068.4)} \right) \left(\frac{73.9}{(655.4)} \right) \left(\frac{67.9}{(655.4)} \right) \left(\frac{67.9}{(655.4)} \right) \left(\frac{67.9}{(655.4)} \right) \left(\frac{67.9}{(655.4)} \right) \left(\frac{67.9}{(650.4)} \right) \left(\frac{67.9}{(650.4)} \right) \left(\frac{67.9}{(650.4)} \right) \left(\frac{67.9}{(650.4)} \right) \left(\frac{67.9}{(600.4)} \right) \left($		2.5 Kpa	64.3											
$ \frac{1}{35 \text{kga}} = \frac{7.3}{(70 \text{gef})} = \frac{7.3}{(9086.4)} = \frac{7.3}{(9086.4)} = \frac{7.3}{(9086.4)} = \frac{7.3}{(9008.4)} = 7.$		(50 psf)	(4410.4)											
$ \left[\begin{array}{c c} 35 \ \mbox{kga} & 73.9 \\ (70 \ \mbox{psi}) & (5088.4) \end{array} \right] \\ \hline \begin{tabular}{ c c c c } \hline \begin{tabular}{c c c c } \hline \begin{tabular}{c c c c } \hline \begin{tabular}{c c } \hline \$														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		3.5 Kpa	73.9											
Image: solution of the sector of t		(70 psf)	(5068.4)											
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	9 metres	1.5 Kpa	67.9											
$ \frac{1}{105 \text{ metres}} = \frac{1}{100 \text{ ps}1} = \frac{1}{(50 \text{ ps}1)} = \frac{1}{$	(30 feet)	(30 psf)	(4655.4)											
$ \frac{2.5 \text{ kpa}}{(50 \text{ psf})} \frac{79.9}{(5477.9)} (5477.9) (5300.4) ($														
$ \frac{(50 \text{ ps})}{(70 \text{ ps})} = \frac{(5477.9)}{(5300.4)} $		2.5 Kpa	79.9											
$ \frac{1}{3.5 \text{ Kpa}} = \frac{1}{(70 \text{ ps})} = \frac{1}{(630.4)} = 1$		(50 psf)	(5477.9)											
$ \frac{3.5 \text{ kpa}}{(70 \text{ psf})} = \frac{91.9}{(6300.4)} $ $ \frac{10.5 \text{ metres}}{(35 \text{ feet})} = \frac{1.5 \text{ kpa}}{(30 \text{ psf})} = \frac{74.7}{(5122.3)} $ $ \frac{2.5 \text{ kpa}}{(50 \text{ psf})} = \frac{88.1}{(6035.2)} $ $ \frac{2.5 \text{ kpa}}{(70 \text{ psf})} = \frac{101.4}{(6036.2)} $ $ \frac{101.4}{(6948.2)} $ $ \frac{12 \text{ metres}}{(40 \text{ feet})} = \frac{1.5 \text{ kpa}}{(30 \text{ psf})} = \frac{84.6}{(5799.6)} $ $ \frac{2.5 \text{ kpa}}{(50 \text{ psf})} = \frac{84.6}{(5799.6)} $ $ \frac{2.5 \text{ kpa}}{(50 \text{ psf})} = \frac{99.7}{(6835.9)} $ $ \frac{2.5 \text{ kpa}}{(50 \text{ psf})} = \frac{99.7}{(6835.9)} $ $ \frac{2.5 \text{ kpa}}{(70 \text{ psf})} = \frac{114.9}{(70 \text{ psf})} = \frac{(7072.2)}{(70 \text{ psf})} = \frac{114.9}{(70 \text{ psf})} = \frac{(7072.2)}{(7072.2)} $														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		3.5 Kpa	91.9											
Image: constraint of the straint of the st		(70 psf)	(6300.4)											
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$														
(35 feet) (30 psf) (5122.3) (6035.2) (6048.2) (6048.2) (6059.2) (6048.2) (6059.2) <t< td=""><td>10.5 metres</td><td>1.5 Kpa</td><td>74.7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	10.5 metres	1.5 Kpa	74.7											
$\frac{12 \text{ metres}}{(40 \text{ feet})} = \frac{15 \text{ Kpa}}{(50 \text{ ps})} = \frac{84.6}{(579.6)}$	(35 feet)	(30 psf)	(5122.3)											
2.5 Kpa (50 psf) 88.1 (6035.2) 88.1 (6035.2) 88.1	· · ·	,	. ,											
(50 psf) (6035.2)		2.5 Kpa	88.1											
$\frac{12 \text{ metres}}{(40 \text{ feet})} = \frac{1.5 \text{ Kpa}}{(50 \text{ ps})} = \frac{84.6}{(5799.6)}$		(50 psf)	(6035.2)											
3.5 Kpa (70 pst) 101.4 (6948.2) 101.4 (6979.4) 101.4 (6979.4) 101.4 (6979.4) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (6983.5) 101.4 (70 pst) 101.4		/	, ,											
Image:		3.5 Kpa	101.4											
12 metres (40 feet) 1.5 Kpa (30 psf) 84.6 (5799.6) 6 1.5 Kpa (5799.6) 99.7 (6835.9) 2.5 Kpa (50 psf) 99.7 (6835.9) 114.9 (70 psf) 114.9 (70 psf) 114.9 (7872.2)		(70 nsf)	(6948.2)											
12 metres (40 feet) 1.5 Kpa (30 psf) 84.6 (5799.6) 2.5 Kpa (50 psf) 99.7 (6835.9) 3.5 Kpa (70 psh) 114.9 (70 psh) (70 psh) (7872.2)		(· P=·/	(
(40 feet) (30 ps) (5799.6)	12 metres	1.5 Kna	84.6											
(c) (b) (c) (c) <th(c)< th=""> <th(c)< th=""> (c)</th(c)<></th(c)<>	(40 feet)	(30 nsf)	(5799.6)											
2.5 Kpa 99.7 (50 psf) (6835.9) 3.5 Kpa 114.9 (70 psf) (7872.2)	(10 1001)	(00 por)	(0.00.0)											
(50 psf) (6835.9) 3.5 Kpa 114.9 (70 psf) (7872.2)		2.5 Kna	99.7											
3.5 Kpa 114.9 (70 psh) (7872.2)		(50 nef)	(6835.0)											
3.5 Kpa 114.9 (70 psh (7872.2)		(00 00)	(0000.0)											
(70 nsh) (7872)		3.5 Kna	114.9											
		(70 nsf)	(7872.2)											



Lintel Width = 10" (254 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 5.5" = use two 10M stirrups @ 5.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			ourry	Linte	el Span - Metres	(feet)		•			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	27.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
(10 feet)	(30 psf)	(1863.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
			no stirrups	no stirrups	no stirrups	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"		
	2.5 Kpa	31.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top		
	(50 psf)	(2160.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.		
			no stirrups	no stirrups	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"		
	3.5 Kpa	35.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(70 psf)	(2456.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
15	4.5.10	05.0	no stirrups	no stirrups	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"		
4.5 metres	1.5 Kpa	35.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top		
(15 leet)	(ou hei)	(2439.0)	1-15WI DUL	1-15W DOL	1-15W DUL.	1-15W DUL.	1-15W DUL.	1-20₩ DOL. 10M @ 7"	1-20101 DOL.	2-15WI DUL.	1-25IVI DUL.		
	2.5 Kna	41.7	1-15M top	1-15M top	1_15M top	1_15M top	1.15M top	1-20M top	2-15M top	2-10W @ 7	2-20M top		
	(50 nsf)	(2859.2)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot	1-25M hot	2-20M hot		
	(50 p31)	(2000.2)	no stirruns	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"	2-10M @ 7"		
	3.5 Kna	47.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	1-30M top		
	(70 psf)	(3278.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	1-30M bot.		
	X - F- 7	()	no stirrups	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"	10M @ 7"		
6.0 metres	1.5 Kpa	45.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top		
(20 feet)	(30 psf)	(3117.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
			no stirrups	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"	2-10M @ 7"		
	2.5 Kpa	53.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(50 psf)	(3659.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"	2-10M @ 7"			
	3.5 Kpa	61.3	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	2-20M top				
	(70 psf)	(4202.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-20M bot.				
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"				
7.5 metres	1.5 Kpa	55.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top			
(25 feet)	(30 pst)	(3779.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
	0 E Kaa	64.7	10W @ /	10M @ 7	10M @ 7	10M @ 7	10M @ /	2-10M @ 7	10M @ 7	2-10M @ 7			
	2.0 Kµa (50 pcf)	(4426.0)	1-15W top	1-15W top	1-15W top	1-20W hot	2-15W top	1-20101 LUP					
	(ou hei)	(4430.9)	10M @ 7"	10M @ 7"	10M @ 7"	1-20W DOL 10M @ 7"	2-10M @ 7"	1-25WI DOL.					
	3.5 Kna	74.3	1-15M ton	1-15M ton	1-15M ton	1-20M ton	2-10M @ 7	TOWN					
	(70 nsf)	(5094.9)	1-15M bot	1-15M bot	1-15M bot	1-20M bot	2-15M hot						
	(,	(******)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"						
9 metres	1.5 Kpa	68.3	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top					
(30 feet)	(30 psf)	(4682.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.					
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"					
	2.5 Kpa	80.3	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top						
	(50 psf)	(5504.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"						
	3.5 Kpa	92.3	1-15M top	1-15M top	1-20M top	2-15M top							
	(70 psf)	(6326.9)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.							
10.5 metres	1 E Kaa	75.4	10M @ /	10M @ 7	10M @ 7	2-10M @ 7	0.1511.444						
10.5 metres	1.5 Kpa	(5.1	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top						
(35 1661)	(30 psr)	(5148.8)	1-15IVI DOL.	1-15WI DOL.	1-15WI DOL.	1-20101 DOL.	2-15W DOL						
	2.5 Kna	88.4	1-15M top	1-15M ton	1-20M ton	2-15M top	2*10WI@7						
	(50 nsf)	(6061.8)	1-15M hot	1-15M hot	1-20M hot	2-15M hot							
	(00 por)	(0001.0)	10M @ 7"	10M @ 7"	10M @ 7"	2-10M @ 7"							
	3.5 Koa	101.8	1-15M top	1-15M top	1-20M top	2 10/11/01							
	(70 psf)	(6974.7)	1-15M bot.	1-15M bot.	1-20M bot.								
	,	. ,	10M @ 7"	10M @ 7"	10M @ 7"								
12 metres	1.5 Kpa	85.0	1-15M top	1-15M top	1-15M top	1-20M top							
(40 feet)	(30 psf)	(5826.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.							
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"							
	2.5 Kpa	100.1	1-15M top	1-15M top	1-20M top								
	(50 psf)	(6862.4)	1-15M bot.	1-15M bot.	1-20M bot.								
			10M @ 7"	10M @ 7"	10M @ 7"								
	3.5 Kpa	115.2	1-15M top	1-15M top	1-20M top								
	(70 pst)	(/୪୫୪./)	1-101/1 DOT.	1-10M DOL 10M @ 7"	1-∠UW DOL.								
				I I I W (D) /	I I I W (D) /								



Lintel Width = 10" (254 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 7" = use two 10M stirrups @ 7" 0/C

FI O I	0		Minimum Reinforcement for Lintels in Load Bearing Walls										
Floor Clear	Ground Snow	Iotal Factored			Carryi	ng Second S	torey Wood I	Frame + Ligh	t Frame Roo	T			
opan metres (feet)	Kna (nsf)	KN/m (lhs/ft)	3.6 m (12 ft)	3 9 m (13 ft)	4 2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5 1 m (17 ft)	5 4 m (18 ft)	5 7 m (19 ft)	6 0 m (20 ft)		
3 metres	1.5 Kpa	27.2	2-15M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	0.4 m (10 m)	0.7 III (10 II)	0.0 11 (20 11)		
(10 feet)	(30 psf)	(1863.9)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.					
()	((2-10M @ 7"	10M @ 7"	2-10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"					
	2.5 Kpa	31.5	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top						
	(50 psf)	(2160.0)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.						
			10M @ 7"	2-10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"						
	3.5 Kpa	35.8	2-20M top	1-30M top	1-25M+1-20M top	2-25M top							
	(70 psf)	(2456.1)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.							
			2-10M @ 7"	10M @ 7"	2-10M @ 7"	2-10M @ 7"							
4.5 metres	1.5 Kpa	35.6	2-20M top	1-30M top	1-25M+1-20M top	2-25M top							
(15 feet)	(30 pst)	(2439.8)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.							
	0.5. Kno	41.7	2-10M @ 7	10M @ /	2-10M @ 7	2-10M @ 7							
	2.0 Kµa (50 pcf)	41.7	1-30W top	1-23W+1-20W top									
	(50 h2i)	(2039.2)	1-30W DUL 10M @ 7"	1-2JWI+1-20WI DUL 2_10M @ 7"									
	3 5 Kna	47.8	10101 (6 7	2 1010 8 7									
	(70 psf)	(3278.7)											
	(10 pol)	(021011)											
6.0 metres	1.5 Kpa	45.5	1-25M+1-20M top										
(20 feet)	(30 psf)	(3117.0)	1-25M+1-20M bot.										
			2-10M @ 7"										
	2.5 Kpa	53.4											
	(50 psf)	(3659.9)											
	3.5 Kpa	61.3											
	(70 pst)	(4202.7)											
7.E matros	1.5 1/20	55.1											
(25 foot)	1.0 Kµa (20 pcf)	33.1 (2770.0)											
(20 1001)	(50 psi)	(3779.0)											
	2.5 Kna	64 7											
	(50 psf)	(4436.9)											
	(00 poi)	(1100.0)											
	3.5 Kpa	74.3											
	(70 psf)	(5094.9)											
9 metres	1.5 Kpa	68.3											
(30 feet)	(30 psf)	(4682.0)											
	2.5 Kpa	80.3											
	(50 pst)	(5504.5)											
	3.5 Kna	02.3											
	(70 nsf)	(6326.9)											
	(10 poi)	(0020.0)											
10.5 metres	1.5 Kpa	75.1											
(35 feet)	(30 psf)	(5148.8)											
	2.5 Kpa	88.4											
	(50 psf)	(6061.8)											
	3.5 Kpa	101.8											
	(70 pst)	(6974.7)											
10 metres	15 1/20	OF O											
12 IIIEUres	1.0 Kpa (30 pof)	0.00											
(40 1881)	(au hai)	(3020.1)											
	2.5 Kna	100 1											
	(50 psf)	(6862.4)											
	(··· F=·)	(
	3.5 Kpa	115.2											
	(70 psf)	(7898.7)											



Lintel Width = 10" (254 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) **Legend** 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 7" = use two 10M stirrups @ 7" 0/C

* check applicability limits table A1.2 in appendix A to use this chart

mu

Elear Clear	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls										
Snan	load	Iniform Load			Carry	ng secona s Linte	i Snan - Metres	-rame + Lign (feet)	t Frame Roo	T			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)		
3 metres	1.5 Kpa	28.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top		
(10 feet)	(30 psf)	(1916.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	32.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top		
	(50 psf)	(2213.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.		
	0.5.1/	00.0	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	3.5 Kpa	30.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top		
	(70 psi)	(2009.1)	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20W DOL 10M @ 0.5"	1-20101 DOL 10M @ 0.5"	1-20101 DOL.	1-20W DOL 10M @ 0.5"		
4.5 metres	1.5 Kna	36.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton		
(15 feet)	(30 psf)	(2492.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.		
. ,	(. ,	· · /	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	42.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top		
	(50 psf)	(2912.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa	48.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(70 pst)	(3331.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
6.0 metres	1.5 Kna	46.3	1-20M top	1-20M top	1-20M top	1.20M top	1-20M top	1-20M top	1-20M top	2-10M @ 9.5	2-15M top		
(20 feet)	(30 nsf)	(3170.1)	1-20M top	1-20M top	1-20M hot	1-20M hot	1-20M top	1-20M top	1-20M top	2-15M top 2-15M hot	2-15M top 2-15M hot		
(201001)	(00 p31)	(0110.1)	no stirrups	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	2.5 Kpa	54.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top		
	(50 psf)	(3712.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"		
	3.5 Kpa	62.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top		
	(70 psf)	(4255.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
7.5 metres	1.5 Kpa	55.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top		
(20 1001)	(ou psi)	(3032.0)	1-20W DOL	1-20101 DOL.	1-20101 DUL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	2-10M @ 0.5"	2-10M @ 0.5"	1-25WI DUL.		
	2.5 Kna	65.5	1-20M ton	1-20M top	1-20M top	1-20M top	1-20M ton	1-20M ton	2-10M @ 9.5	1-25M ton	2-20M ton		
	(50 psf)	(4490.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
	(·····/	(,	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa	75.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
	(70 psf)	(5148.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
9 metres	1.5 Kpa	69.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top		
(30 feet)	(30 psr)	(4735.0)	1-20W DOL	1-20101 DOL 10M @ 0.5"	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL 2 10M @ 0.5"	1-25IVI DOL.	2-20WI DOL. 2.10M @ 0.5″		
	2.5 Kna	81.1	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	2-10W @ 9.5	10101 @ 9.5	2-1010 @ 9.5		
	(50 psf)	(5557.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.				
	(** ;**)	()	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"				
	3.5 Kpa	93.1	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top					
	(70 psf)	(6380.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.					
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"					
10.5 metres	1.5 Kpa	75.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top			
(35 feet)	(30 pst)	(5201.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.			
	0.5 Kpg	90.0	no stirrups	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	2-10M @ 9.5	10M @ 9.5	2-10M @ 9.5			
	2.0 Kpd (50 nsf)	(6114.8)	1-20M top	1-20M hot	1-20M bot	1-20M hot	1-20M hot	2-15M top 2-15M hot	2-2010 top 2-2010 hot				
	(50 p31)	(0114.0)	no stirruns	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"				
	3.5 Kpa	102.5	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	E TOIL O DIO				
	(70 psf)	(7027.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.					
	· · · ·		no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"					
12 metres	1.5 Kpa	85.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top				
(40 feet)	(30 psf)	(5879.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.				
	0.5.1/	100.0	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"				
	2.0 Kpa (50 pcf)	100.9 (6015 5)	1-20M top	1-20M top	1-20M top	1-20M top	2-13M top 2.15M bot	1-231/1 TOP					
	(ou hei)	(0910.0)	no stirruns	1-2010 DUL 10M @ 9.5"	1-2010 DUL. 10M @ Q 5"	1-2010 DUL. 10M @ Q 5"	2-10₩ DUL 2-10M @ Q 5"	1-20WI DUL 10M @ 9.5"					
	3.5 Kna	116.0	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	10MI & J.J					
	(70 psf)	(7951.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.						
	x r: /	· · ·/	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"						



Lintel Width = 10° (254 mm) Lintel Depth = 16° (406 mm) Effective Depth = 14° (406 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) **Legend** 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load				Linte	I Span - Metres	(feet)					
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)		
3 metres	1.5 Kpa	28.0	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top		
(10 feet)	(30 psf)	(1916.9)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.		
. ,	,	. ,	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	2.5 Kpa	32.3	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top		
	(50 psf)	(2213.0)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top		
	/	· · /	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa	36.6	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top		
	(70 psf)	(2509.1)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.		
	/	· · /	2-10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
4.5 metres	1.5 Kpa	36.4	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top		
(15 feet)	(30 psf)	(2492.8)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top	2-30M bot.		
. ,	,	. ,	2-10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"		
	2.5 Kpa	42.5	1-25M top	2-20M top	2-20M top	1-30M top	2-25M top	2-25M top					
	(50 psf)	(2912.3)	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	2-25M bot.	2-25M bot.					
	,	. ,	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"					
	3.5 Kpa	48.6	1-25M top	2-20M top	1-30M top	2-25M top							
	(70 psf)	(3331.8)	1-25M bot.	2-20M bot.	1-30M bot.	2-25M bot.							
	,	. ,	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"							
6.0 metres	1.5 Kpa	46.3	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top						
(20 feet)	(30 psf)	(3170.1)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.						
· · /	,	. ,	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"						
	2.5 Kpa	54.2	2-20M top	1-30M top	1-25M+1-20M top								
	(50 psf)	(3712.9)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.								
	/	· · /	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"								
	3.5 Kpa	62.1	1-30M top										
	(70 psf)	(4255.8)	1-30M bot.										
	/	. ,	10M @ 9.5"										
7.5 metres	1.5 Kpa	55.9	2-20M top	1-30M top									
(25 feet)	(30 psf)	(3832.0)	2-20M bot.	1-30M bot.									
(,	((2-10M @ 9.5"	10M @ 9.5"									
	2.5 Kpa	65.5	1-30M top										
	(50 psf)	(4490.0)	1-30M bot.										
	((,	10M @ 9.5"										
	3.5 Kpa	75.1											
	(70 psf)	(5148.0)											
	(- 1 - 7	(****)											
9 metres	1.5 Kpa	69.1											
(30 feet)	(30 psf)	(4735.0)											
· · /	,	. ,											
	2.5 Kpa	81.1											
	(50 psf)	(5557.5)											
	/	· · /											
	3.5 Kpa	93.1											
	(70 psf)	(6380.0)											
10.5 metres	1.5 Kpa	75.9											
(35 feet)	(30 psf)	(5201.9)											
	2.5 Kpa	89.2											
	(50 psf)	(6114.8)											
	3.5 Kpa	102.5											
	(70 psf)	(7027.8)											
12 metres	1.5 Kpa	85.8											
(40 feet)	(30 psf)	(5879.1)											
, í	/	· · /											
	2.5 Kpa	100.9											
	(50 psf)	(6915.5)											
	/	. /											
	3.5 Kpa	116.0											
	(70 psf)	(7951.8)											



Lintel Width = 10° (254 mm) Lintel Depth = 16° (406 mm) Effective Depth = 14° (406 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls									
Snan	load	Uniform Load			Carryi	ng secona s Linte	l Snan - Metres	-rame + Lign (feet)	It Frame Roo	r		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	28.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(10 feet)	(30 psf)	(1970.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	
	2.5 Kpa	33.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2266.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
	0.5.16	07.4	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	
	3.5 Kpa	37.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(70 psr)	(2002.2)	1-20W DOL	1-20101 DOL	1-20101 DOL.	1-20101 DOL.	1-2010 DOL	1-201VI DOL.	1-20101 DOL 10M @ 12"	1-20101 DOL.	1-20101 DOL.	
4.5 metres	1.5 Kna	37.1	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M top	1-20M ton	
(15 feet)	(30 psf)	(2545.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
()	(()	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	
	2.5 Kpa	43.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
	(50 psf)	(2965.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	
	3.5 Kpa	49.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
	(70 psf)	(3384.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
0.0	4.5.16	17.0	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	
6.0 metres	1.5 Kpa	47.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	
(20 leet)	(30 hsi)	(3223.2)	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DUL. 10M @ 12"	1-20101 DOL. 10M @ 12"	1-20101 DOL.	1-20W DOL 10M @ 12"	
	2.5 Kna	54.9	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	
	(50 psf)	(3766.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
	(()	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	
	3.5 Kpa	62.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	
	(70 psf)	(4308.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	
			no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	
7.5 metres	1.5 Kpa	56.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	
(25 feet)	(30 psf)	(3885.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	
	0.5 //	00.0	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	
	2.5 Kpa (50 pcf)	00.3	1-20101 top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M bot	1-20M bot	2-15W top	1-25M top	
	(ou hei)	(4043.1)	1-20W DOL	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DUL. 10M @ 12"	1-20101 DOL.	2-15W DUL 2-10M @ 12"	1-25WI DUL. 10M @ 12"	
	3 5 Kna	75.9	1-20M ton	1-20M top	1-20M ton	1-20M ton	1-20M ton	1-20M top	2-15M top	2-10M @ 12	1-25M ton	
	(70 psf)	(5201.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	
	/	· · /	no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	
9 metres	1.5 Kpa	69.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	
(30 feet)	(30 psf)	(4788.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	
			no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	
	2.5 Kpa	81.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(50 pst)	(5610.6)	1-20W DOT.	1-20M DOL	1-20M DOT.	1-20M DOT.	1-20M DOT.	1-20101 DOT.	2-15W DOL	1-25M DOT.	2-2010 DOT.	
	3.5 Kna	03.0	1-20M ton	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-10WI@12 2-15M ton	1-25M top	2-10W @ 12 1-25M±1-15M ton	
	(70 nsf)	(6433.1)	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M bot	2-15M hot	1-25M hot	1-25M+1-15M hot	
	(10 pol)	(0.000.1)	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	
10.5 metres	1.5 Kpa	76.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	1-25M top	
(35 feet)	(30 psf)	(5254.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	1-25M bot.	
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	10M @ 12"	
	2.5 Kpa	90.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(50 psf)	(6167.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
	0.5 //	100.0	no stirrups	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	10M @ 12	2-10M @ 12	
	3.5 Kpa (70 pcf)	(7090.0)	1-20101 top	1-20M top	1-20M top	1-20M top	1-20M top	2-15W top	1-25W top	2-20M top	1-30101 top	
	(70 þsi)	(1000.9)	no stirrune	no stirrune	1°∠0101 DUL. 10M @ 12″	1°∠0101 DUL. 10M @ 12″	1°∠0/₩ DUL 10M @ 12″	2-10₩ DUL 2-10M @ 10"	1-20WI DUL. 10M @ 19"	2-201₩ DUL. 2-10M @ 10"	1-30101 DUL 10M @ 6 25"	
12 metres	1,5 Kna	86.6	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M top	1-25M ton	2-20M ton	
(40 feet)	(30 psf)	(5932.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
. ,	/	. ,	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12.5"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	
	2.5 Kpa	101.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	1-30M top	
	(50 psf)	(6968.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 6"	
	3.5 Kpa	116.8	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top	
	(70 pst)	(8004.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	
			no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	2-10M @ 12	2-10M @ 6	2-10M @ 6	





Lintel Width = 10" (254 mm) Lintel Depth = 20 (508 mm) Effective Depth = 21.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 2-20M top = top rebar 2-20M bot.= bottom rebar 2-10M @ 6" = use two 10M stirrups @ 6" O/C

20 ~

10″ (254mm)

20~

10″ (254mm)

ò

Floor Clear Span	Ground snow load	Total Factored Uniform Load		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Son - Metres (feet)									
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)		
3 metres	1.5 Kpa	28.7	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top		
(10 feet)	(30 psf)	(1970.0)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.		
	0.5. Kno	22.1	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	2-10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	10M @ 12		
	2.3 Kµa (50 nsf)	(2266 1)	1-20M top	1-20M hot	2-15M hot	2-15M hot	1-25M top	2-2010 top 2-2010 hot	2-2010 top 2-2010 hot	1-30M hot	1-25M+1-20M hot		
	(00 poi)	(2200.1)	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"		
	3.5 Kpa	37.4	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top		
	(70 psf)	(2562.2)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.		
			10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"		
4.5 metres	1.5 Kpa	37.1	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top		
(15 feet)	(30 psf)	(2545.9)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.		
	2.5 Kna	43.3	2-15M ton	2-10WI@12 2-15M ton	2-10WI@12 1-25M ton	10WI@12 2=20M ton	2-10101@12 2-201M top	2-10M @ 12 1-25M+1-15M ton	1.25M±1.20M ton	2-10M @ 12 2-25M top	2-10WI@12 2-25M ton		
	2.3 Kpa (50 nsf)	(2965.4)	2-15M top	2-15M top	1-25M hot	2-2011 top 2-2011 hot	2-2011 top 2-2014 hot	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top 2-25M hot		
	(00 poi)	(2000.1)	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"		
	3.5 Kpa	49.4	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top		
	(70 psf)	(3384.8)	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.		
			2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"		
6.0 metres	1.5 Kpa	47.0	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top		
(20 feet)	(30 pst)	(3223.2)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.		
	2.5 Kna	54.9	2-10W @ 12 1-25M ton	1.25M ton	2-20M ton	2-10W @ 12 1-30M ton	1000 @ 12	2-10W @ 12 2-25M ton	2-10M @ 12 1-30M+1-25M ton	2-10M @ 12 1-30M+1-25M top	2-10WI@12 2-30M ton		
	(50 nsf)	(3766.0)	1-25M hot	1-25M hot	2-20M hot	1-30M hot	1-25M+1-20M hot	2-25M hot	1-30M+1-25M hot	1-30M+1-25M hot	2-30M hot		
	(00 poi)	(0100.0)	10M @ 12"	10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"		
	3.5 Kpa	62.9	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	2-30M top			
	(70 psf)	(4308.8)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	2-30M bot.			
			10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"			
7.5 metres	1.5 Kpa	56.7	1-25M top	2-20M top	2-20M top	1-30M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
(25 feet)	(30 psf)	(3885.1)	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
	2.5. Kna	66.3	10M @ 12 2-20M top	2-10M @ 12 1-30M top	2-10M @ 12 1-25M+1-20M top	10M @ 12 2-25M top	2-10M @ 12 2-25M top	2-10M @ 12 1-30M 1-25M top	2-10M @ b	2-10M @ 6			
	(50 nsf)	(4543 1)	-20M hot	1-30M hot	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top				
	(00 por)	(101011)	2-10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
	3.5 Kpa	75.9	2-20M top	1-30M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top					
	(70 psf)	(5201.1)	2-20M bot.	1-30M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
			2-10M @ 12"	10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"					
9 metres	1.5 Kpa	69.9	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top				
(30 feet)	(30 pst)	(4/88.1)	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.				
	2.5 Kna	81.9	2-10WI@12 1-25M±1-15M ton	1.25M±1.20M ton	2-10WI@12 2-25M ton	2-10₩ @ b 1-30M±1-25M ton	2-10/0/@ b 2-30M top	2-10WI@b	2-10WI @ 0				
	(50 nsf)	(5610.6)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
	(** (**))	()	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	3.5 Kpa	93.9	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top							
	(70 psf)	(6433.1)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.							
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"							
10.5 metres	1.5 Kpa	76.7	2-20M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top					
(So leel)	(50 psi)	(5254.9)	2-20WI DOL 2-10M @ 12"	1-25WI+1-20WI DOL 2-10M @ 12"	2-20W DUL 2-10M @ 6"	2-20W DUL 2-10M @ 6"	1-30WI+1-23WI DUL 2-10M @ 6"	2-30W DOL 2-10M @ 6"					
	2.5 Kpa	90.0	1-25M+1-20M top	2-10W @ 12	1-30M+1-25M top	2-30M top	2-10101 @ 0	2-10WI @ 0					
	(50 psf)	(6167.9)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.							
	· · /	× ,	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"							
	3.5 Kpa	103.3	2-25M top	2-25M top	2-30M top								
	(70 psf)	(7080.9)	2-25M bot.	2-25M bot.	2-30M bot.								
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"								
12 metres	1.5 Kpa	86.6	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top						
(40 teet)	(30 psr)	(5932.2)	1-20W+1-10W DOL 2-10M @ 12"	2-25WI DOL 2-10M @ 6"	2-25WI DOL 2-10M @ 6"	1-30INI+1-23INI DOL 2-10M @ 6"	2-30WI DOL 2-10M @ 6"						
	2.5 Kna	101.7	2-25M ton	2-25M top	1-30M+1-25M ton	2-10WI @ 0	2-10101 @ 0						
	(50 psf)	(6968.5)	2-25M bot.	2-25M bot.	1-30M+1-25M bot.								
	(()	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"								
	3.5 Kpa	116.8	2-25M top	1-30M+1-25M top									
	(70 psf)	(8004.9)	2-25M bot.	1-30M+1-25M bot.									
			2-10M @ 6"	2-10M @ 6"									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $								ups @ 6″ O/C					



Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls									
Span	load	Uniform Load			Garryi	ng second s Linte	l Span - Metres	(feet)	L Frame Roo			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	29.5	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(10 feet)	(30 psf)	(2023.1)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
		no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	
	2.5 Kpa	33.8	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
	(50 pst)	(2319.2)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	3.5 Kna	38.2	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M ton	2-15M top	2-15M top	2-15M top	
	(70 psf)	(2615.3)	2-15M top	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	(10 poi)	(2010:0)	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	
4.5 metres	1.5 Kpa	37.9	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(15 feet)	(30 psf)	(2599.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	
	2.5 Kpa	44.0	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
	(50 psr)	(3018.4)	Z-15WI DOL	2-15W DOL	2-15W DOL	2-15IVI DOL.	2-15W DOL	2-15WI DOL	Z-13W DOL	2-15W DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	
	3.5 Kna	50.2	2-15M ton	2-15M top	2-15M top	2-15M top	2-15M top	2-15M ton	2-15M ton	2-15M top	2-10M @ 13	
	(70 psf)	(3437.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	· · · /	· · ·	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
6.0 metres	1.5 Kpa	47.8	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(20 feet)	(30 psf)	(3276.2)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	55.7	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
	(50 psr)	(3819.1)	Z-15WI DOL	2-15W DOL	2-15W DOL	2-15IVI DOL.	2-15W DOL	2-15WI DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	2-15W DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	
	3.5 Kpa	63.6	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-10M @ 15	2-15M top	2-15M top	2-10M @ 13	
	(70 psf)	(4361.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	· · · /	· · ·	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
7.5 metres	1.5 Kpa	57.5	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(25 feet)	(30 psf)	(3938.2)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	0.5.1/	07.1	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa (50 pcf)	0/.1 (4506.1)	2-15M top 2 15M bot	2-15M top 2.15M bot	2-15M top 2.15M bot	2-15M top 2.15M bot	2-15M top 2.15M bot	2-15M top	2-15M top 2 15M bot	2-15M top 2.15M bot	2-15M top 2.15M bot	
	(50 psi)	(4550.1)	no stirruns	no stirruns	no stirruns	no stirruns	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	3.5 Kpa	76.7	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
	(70 psf)	(5254.1)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
9 metres	1.5 Kpa	70.6	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(30 feet)	(30 pst)	(4841.2)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	
	2.5 Kna	82.6	2-15M top	2-15M top	2-15M top	2-15M top	2-10W @ 15 2-15M top	2-10W @ 15 2-15M ton	2-10W @ 15 2-15M ton	2-10W @ 15	2-101/1@15 1-25M ton	
	(50 psf)	(5663.6)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	
	(** (**))	()	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
	3.5 Kpa	94.6	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	
	(70 psf)	(6486.1)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
10.5 metres	1.5 Kpa	(5208.0)	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	
(55 1661)	(ou hei)	(3306.0)	no stirruns	2=15W DOL no stirruns	2=15W DOL no stirruns	no stirruns	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	90.8	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	
	(50 psf)	(6221.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	
			no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
	3.5 Kpa	104.1	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	2-20M top	
	(70 psf)	(7133.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
10 motroe	1.5 Km	<u>87 0</u>	no stirrups	no stirrups	2-10W @ 15	2-10W @ 15	2-10W @ 15	2-10M @ 15	2-10M @ 15	10WI@15 1-25M top	2-10M @ 15	
(40 feet)	(30 nef)	07.3 (5985.3)	2-15W top 2-15M hot	2-15W top 2-15M hot	2-15/VLUp 2-15/M hot	2-15/VLUp 2-15/M hot	2-15/VLUp 2-15/M hot	2-15W top 2-15M hot	2-15W top 2-15M hot	1-25M hot	1-25W top 1-25M hot	
(10 1001)	(00 hai)	(0000.0)	no stirruns	no stirruns	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	
	2.5 Kpa	102.4	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	2-20M top	
	(50 psf)	(7021.6)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15″	2-10M @ 15"	
	3.5 Kpa	117.6	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M+1-15M top	
	(70 pst)	(8057.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M+1-15M bot.	
			no surrups	no surrups	2-10WI @ 15	2-10WI@15	2-10WI @ 15	2-10WI@15	2-10WI@15	IUWI @ 15	2-10W @ 15	



mmscc

21.8



Lintel Width = 10" (254 mm) Lintel Depth = 24 (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 2-15M top = top rebar 2-15M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof								
Span	load	Uniform Load			2	Linte	l Span - Metres	(feet)				
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)	
3 metres	1.5 Kpa	29.5	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	
(10 feet)	(30 psf)	(2023.1)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	
	0.5.1/	00.0	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	
	2.5 Kpa	33.8	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top	2-2010 top	2-20M top	
	(ou psi)	(2319.2)	2-15W DOL	2-15W DOL	2-15WI DOL.	2-15W DOL	2-15W DOL	1-23IVI DOL.	1-23WI DOL 10M @ 15"	2-20101 DOL.	2-20101 DOL.	
	3.5 Kna	38.2	2-10W @ 15 2-15M ton	2-10W @ 15 2-15M top	2-10W @ 15	2-10W @ 15 2-15M ton	2-10W @ 15 1-25M top	1-25M ton	2-20M top	2-10W @ 15	2-10W @ 15	
	(70 nsf)	(2615.3)	2-15M hot	2-15M hot	2-15M hot	2-15M hot	1-25M hot	1-25M hot	2-20M hot	2-20M hot	1-30M hot	
	(10 p31)	(2010.0)	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
4.5 metres	1.5 Kpa	37.9	2-15M top	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	2-20M top	1-30M top	
(15 feet)	(30 psf)	(2599.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	
· · /	,	· · /	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	
	2.5 Kpa	44.0	2-15M top	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-30M top	1-25M+1-20M top	
	(50 psf)	(3018.4)	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-30M bot.	1-25M+1-20M bot.	
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	
	3.5 Kpa	50.2	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	1-25M+1-20M top	2-25M top	
	(70 psf)	(3437.9)	2-15M bot.	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	2-25M bot.	
			2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
6.0 metres	1.5 Kpa	47.8	2-15M top	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	
(20 feet)	(30 psf)	(3276.2)	2-15M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	55.7	2-15M top	2-15M top	1-25M top	2-20M top	1-30M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	
	(50 pst)	(3819.1)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	
	2.5. Kaa	60.6	2-10M @ 15	2-10M @ 15	10M @ 15	2-10M @ 15	10M @ 15	10M @ 15	2-10M @ 15	2-10M @ 15	2-10M @ 15	
	3.3 Kµa (70 pcf)	(4261.0)	2-15W t0p	1-20W top	2-20101 top 2.2014 bot	1-30W hot	1-23W+1-20W top	2-23W tup 2.25M bot	2-25W tup 2.25M bot	1-30W+1-23W top	1-30W+1-25W top	
	(70 psi)	(4301.9)	2-10M @ 15"	1-25W DUL 10M @ 15"	2-20W DOL 2-10M @ 15"	1-30W DUL 10M @ 15"	2-10M @ 15"	2-25W DOL 2-10M @ 15"	2-25Wi DOL 2-10M @ 15"	2_10M @ 15"	2-10M @ 7.5"	
7.5 metres	1.5 Kna	57.5	2-10M @ 13	1-25M ton	1-25M ton	2-20M ton	1-30M ton	1-25M+1-20M ton	2-10M @ 13	2-1011 @ 13	1-30M+1-25M ton	
(25 feet)	(30 nsf)	(3938.2)	2-15M hot	1-25M hot	1-25M hot	2-20M hot	1-30M bot	1-25M+1-20M hot	2-25M hot	2-25M hot	1-30M+1-25M bot	
(201001)	(00 poi)	(0000.2)	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	
	2.5 Kpa	67.1	1-25M top	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
	(50 psf)	(4596.1)	1-25M bot.	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	
			10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	
	3.5 Kpa	76.7	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top		
	(70 psf)	(5254.1)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.		
			10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
9 metres	1.5 Kpa	70.6	1-25M top	2-20M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top	
(30 feet)	(30 psf)	(4841.2)	1-25M bot.	2-20M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.	
	0.5.1/	00.0	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	
	2.5 Kpa	82.6	2-20M top	2-2010 top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
	(ou hei)	(0003.0)	2-20W DOL 2.10M @ 15"	2-20W DOL 2 10M @ 15"	1-25IVI+1-20IVI DOL 2 10M @ 15"	2-20W DUL	2-20W DUL	1-30IVI+1-25IVI DOL 2 10M @ 7.5"	2-30W DOL 2 10M @ 7.5"			
	3.5 Kna	94.6	2-10W @ 15	2-10W @ 15 1-25M±1-15M ton	2-10W @ 15	2-10W @ 15	2-10W @ 7.5	2-10W @ 7.5	2-10101@1.5			
	(70 nsf)	(6486 1)	2-20M top	1-25M+1-15M top	2-25M hot	2-25M hot	1-30M+1-25M hot	2-30M hot				
	(, o por)	(0.00.1)	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
10.5 metres	1.5 Kpa	77.4	1-25M top	2-20M top	1-30M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top		
(35 feet)	(30 psf)	(5308.0)	1-25M bot.	2-20M bot.	1-30M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.		
			10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		
	2.5 Kpa	90.8	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
	(50 psf)	(6221.0)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	3.5 Kpa	104.1	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
	(70 psf)	(7133.9)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
10	4.5.4	07.0	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"		0.00111			
12 metres	1.5 Kpa	8/.3	2-20M top	1-25M+1-15M top	1-25M+1-2UM top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top			
(4U teet)	(30 pst)	(5985.3)	2-2010 bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-251V bot.	1-3UM+1-25M bot.	1-3UM+1-25M bot.	2-30M bot.			
	2.5 Kno	102.4	2-10W/@10	2-10W/@10	2-10WI @ 15	2-10W @ 7.5	2-10101 @ 7.0	2-10WI@7.5	2-101VI @ 7.5			
	2.0 Nµa (50 nef)	102.4 (7021.6)	1-20101+1-10101 (0P	1-20101+1-20101 (0P	2=201VI LUP 2=25M hot	1-30/01+1-23/01 (0P	2-301/1 LUP 2-301/1 hot					
	(oo hai)	(1021.0)	2-10M @ 15"	2-10M @ 7.5"	2-2010 DUL 2-10M @ 7.5"	2-10M @ 7.5"	2-301₩ DUL 2-10M @ 7.5"					
	3.5 Kna	117.6	1-25M+1-20M ton	2-25M ton	1-30M+1-25M ton	2-30M ton						
	(70 nsf)	(8057.9)	1-25M+1-20M hot	2-25M bot.	1-30M+1-25M hot	2-30M hot.						
	\ · F='/	(<i>.</i>)	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"						
		ľ		1		Lintal Middle do)" (054)		1			



21.8



(254mm)

10 /

Lintel Width = 10 (254 mm) Lintel Depth = 24 (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 2-15M top = top rebar 2-15M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C



Tables for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof

Canada

MLH 4x10	MLH 6x10	MLH 8x10	MLH 10x10
MLH 4x12	MLH 6x12	MLH 8x12	MLH 10x12
MLH 4x16	MLH 6x16	MLH 8x16	MLH 10x16
MLH 4x20	MLH 6x20	MLH 8x20	MLH 10x20
MLH 4x24	MLH 6x24	MLH 8x24	MLH 10x24





	0		Minimum Reinforcement for Lintels in Load Bearing Walls							
Floor Clear	Ground snow	Total Factored	C	arrying Second Storey	ICF + Light Frame Ro	of				
Span	load	Uniform Load	0.0 (0.0)	Lintel Span -	Metres (feet)	1.0 (0.1)				
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)				
3 metres	1.5 Kpa	34.3	1-10M top	1-10M top	1-15M top					
(10 feet)	(30 pst)	(2352.7)	1-10M bot.	1-10M bot.	1-15M bot.					
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	2.5 Kpa	38.6	1-10M top	1-10M top						
	(50 psf)	(2648.8)	1-10M bot.	1-10M bot.						
			10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	43.0	1-10M top	1-10M top						
	(70 psf)	(2944.9)	1-10M bot.	1-10M bot.						
			10M @ 5.5"	10M @ 5.5"						
4.5 metres	1.5 Kpa	42.7	1-10M top	1-10M top						
(15 feet)	(30 psf)	(2928.6)	1-10M bot.	1-10M bot.						
			10M @ 5.5"	10M @ 5.5"						
	2.5 Kpa	48.8	1-10M top	1-10M top						
	(50 psf)	(3348.1)	1-10M bot.	1-10M bot.						
			10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	55.0	1-10M top							
	(70 psf)	(3767.5)	1-10M bot.							
	,	· · · /	10M @ 5.5"							
6.0 metres	1.5 Kpa	52.6	1-10M top							
(20 feet)	(30 nsf)	(3605.9)	1-10M hot							
(201000)	(00 poi)	(0000.0)	10M @ 5.5"							
	2.5 Kna	60.5	1-10M ton							
	(50 nsf)	(4148.7)	1-10M hot							
	(00 p3i)	(1.0+1+)	10M @ 5.5"							
	2.5 Kno	1 93	1 10M top							
	0.0 Kµd (70 ppf)	(4001 5)	1-TOW LOP							
	(70 psi)	(4091.0)	1-10W DUL							
7.E metree	1.5 Km	60.0	0.0 W WUI							
7.5 Inelies	1.0 Kµa	02.3	1-10W top							
(25 1661)	(30 psr)	(4207.8)	1-10M DOL.							
	0.5.1/	74.0	10M @ 5.5							
	2.5 Kpa	/1.9								
	(50 pst)	(4925.8)								
	0.5.1/	04.5								
	3.5 Kpa	6.16								
	(70 pst)	(5583.8)								
0	1 F 1/	75.4								
9 metres	1.0 Kµa	/ 3.4								
(30 1661)	(30 psr)	(0170.8)								
	0.5 1/	07.4								
	2.5 Kpa	87.4								
	(50 pst)	(5993.3)								
	0.5.1/	00.4								
	3.5 Kpa	99.4								
	(70 pst)	(6815.8)								
10.5										
10.5 metres	1.5 Kpa	82.3								
(35 feet)	(30 pst)	(5637.6)								
	0.5.11	05.0								
	2.5 Kpa	95.6								
	(50 pst)	(6550.6)								
		100.0								
	3.5 Kpa	108.9								
	(70 psf)	(7463.6)								
12 metres	1.5 Kpa	92.1								
(40 feet)	(30 psf)	(6314.9)								
	2.5 Kpa	107.3								
	(50 psf)	(7351.2)								
	3.5 Kpa	122.4								
	(70 psf)	(8387.6)								



(102mm) 4 [•]



Lintel Width = 4" (102 mm) Lintel Width = 4 (102 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

10M @ 5.5" = use one 10M stirrup @ 5.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Factored Carrying Second Storey ICF + Light Frame Roof						
Span	load	Uniform Load		Lintel Span -	Metres (feet)				
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)			
3 metres	1.5 Kpa	34.5	1-10M top	1-10M top	1-10M top	1-15M top			
(10 feet)	(30 psf)	(2363.2)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.			
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"			
	2.5 Kpa	38.8	1-10M top	1-10M top	1-10M top	1-15M top			
	(50 psf)	(2659.3)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.			
	/	· · · /	10M @7"	10M @ 7"	10M @ 7"	10M @ 7"			
	3.5 Kpa	43.1	1-10M top	1-10M top	1-10M top				
	(70 psf)	(2955.4)	1-10M bot.	1-10M bot.	1-10M bot.				
	() ()	()	10M @ 7"	10M @ 7"	10M @ 7"				
4.5 metres	1.5 Kpa	42.9	1-10M top	1-10M top	1-10M top				
(15 feet)	(30 nsf)	(2939.1)	1-10M bot	1-10M hot	1-10M hot				
(101000)	(00 poi)	(2000.1)	10M @ 7"	10M @ 7"	10M @ 7"				
	2.5 Kna	49.0	1-10M ton	1-10M top	1-15M ton				
	(50 nsf)	(3358.6)	1-10M hot	1-10M hot	1-15M hot				
	(50 p3i)	(0000.0)	10M @ 7"	10M @ 7"	10M @ 7"				
	3.5 Kna	55.1	1_10M top	1-10M top	IUNI @ /				
	(70 nof)	(2770 0)	1 10M bot	1 10M hot					
	(10 hai)	(0770.0)	10M @ 7"	10M @ 7"					
6.0 motros	1.5 Kno	50.0	1 10M top	1 10M top					
0.0 finet	1.0 Kµd (20 ppf)	JZ.0 (2010.0)	1 10M bot	1-10M top					
(20 leet)	(au hai)	(3010.3)	1-10W DOL.	1-10W DUL.					
	0.5.1/	C0 7	IUNI@7	1 10M @ 7					
	2.5 Kµa	00.7	1-10W LOP	1-10W top					
	(ou psi)	(4159.2)	1-10W DOL.	I-TUNI DOL					
	0.5.1/	00.0	10M @ 7	10M @ 7					
	3.5 Kpa	08.0	1-10W top						
	(70 pst)	(4702.0)	1-1UM DOT.						
		00 <i>l</i>	10M @ /						
7.5 metres	1.5 Kpa	62.4	1-10M top	1-10M top					
(25 feet)	(30 pst)	(42/8.3)	1-10M bot.	1-10M bot.					
	0.5.1/	70.0	10M @ 7	10M @ 7					
	2.5 Kpa	/2.0	1-1UW top						
	(ou psi)	(4930.3)	1-10W DOL.						
	0.5.1/	01.0	1 10M @ /						
	3.5 Kpa	81.0	1-10W top						
	(70 hsi)	(0094.2)	1-10W DOL.						
0 metree	1.5 1/20	75.6	IUW @ /						
9 IIIelies	1.0 Kµd (20 ppf)	/ 5.0	1 10M bot						
(30 leet)	(au hai)	(3101.3)	10M @ 7"						
	0.5 Km	97.6	1 10M top						
	2.0 Kpa (50 nef)	(8 2003)	1-10M bot						
	(50 hai)	(0003.0)	10M @ 7"						
	3.5 Kna	99.6	1011 6 7						
	(70 nef)	(6826 3)							
	(10 pol)	(0020.0)							
10.5 metres	1.5 Kpa	82.4	1-10M top						
(35 feet)	(30 nsf)	(5648.1)	1-10M bot						
(00 1001)	(00 poi)	(001011)	10M @ 7"						
	2.5 Kpa	95.7	Tom of						
	(50 nsf)	(6561.1)							
	(** (**)	()							
	3.5 Kpa	109.0							
	(70 psf)	(7474.0)							
	A - F - 7	v -7							
12 metres	1.5 Kpa	92.3	1-10M top						
(40 feet)	(30 psf)	(6325.4)	1-10M bot.						
		. /	10M @ 7"						
	2.5 Kpa	107.4							
	(50 psf)	(7361.7)							
	3.5 Kpa	122.5							
	(70 psf)	(8398.0)							





Lintel Width = 4" (102 mm) Linter Width = 4 (102 mm) Lintel Depth = $12^{"}$ (305 mm) Effective Depth = $10^{"}$ (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 7" = use one 10M stirrup @ 7" 0/C

Floor Oleon	Owners diamous	Total Fastered		Minim	um Reinforcem	ent for Lintels	in Load Bearing	g Walls	
Floor Clear	Ground snow	Iotal Factored		C	arrying Second	d Storey ICF + L		DŤ	
oµali metres (feet)	IUdu Kna (nef)	VIIIVIII LUdu KN/m (lhe/ft)	0.0 m (3.ft)	1 2 m (/1 ft)	1.5 m (5 ft)	1 8 m (6 ff)	2 1 m (7 ft)	2 / m (8 ft)	2.7 m (0.ft)
3 metres	1.5 Kna	34.8	1-10M ton	1-10M top	1-10M ton	1-10M ton	1-15M ton	1-15M ton	1-15M ton
(10 feet)	(30 nsf)	(2384.0)	1-10M hot	1-10M hot	1-10M bot	1-10M hot	1-15M hot	1-15M hot	1-15M hot
(101000)	(00 poi)	(200110)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"
	2.5 Kpa	39.1	1-10M top	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top	
	(50 psf)	(2680.1)	1-10M bot.	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.	
	(····/	()	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	
	3.5 Kpa	43.4	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top		
	(70 psf)	(2976.1)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.		
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
4.5 metres	1.5 Kpa	43.2	1-10M top	1-10M top	1-10M top	1-15M top	1-15M top		
(15 feet)	(30 psf)	(2959.9)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.		
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	49.3	1-10M top	1-10M top	1-10M top	1-15M top			
	(50 psf)	(3379.3)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
	3.5 Kpa	55.4	1-10M top	1-10M top	1-10M top	1-15M top			
	(70 psf)	(3798.8)	1-10M bot.	1-10M bot.	1-10M bot.	1-15M bot.			
		50.1	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
6.0 metres	1.5 Kpa	53.1	1-10M top	1-10M top	1-10W top	1-15W top			
(20 teet)	(30 pst)	(3637.1)	1-1UM DOT.	1-1UM DOT.	1-10M DOT.	1-15M DOT.			
	0.E.Kno	61.0	1 10M top	1 10M top	1 10M top	TUNI @ 9.5			
	2.0 Kµa (50 pcf)	01.0	1-TOW top	1-TOW top	1-10M top				
	(50 hsi)	(4100.0)	1-10W DUL.	10M @ 0.5"	10M @ 0.5"				
	3.5 Kna	68.9	1-10M ton	1-10M ton	1-15M ton				
	(70 nsf)	(4722.8)	1-10M hot	1-10M hot	1-15M hot				
	(10 pol)	(1122.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
7.5 metres	1.5 Kpa	62.7	1-10M top	1-10M top	1-15M top				
(25 feet)	(30 psf)	(4299.0)	1-10M bot.	1-10M bot.	1-15M bot.				
()	(····/	()	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
	2.5 Kpa	72.3	1-10M top	1-10M top	1-15M top				
	(50 psf)	(4957.0)	1-10M bot.	1-10M bot.	1-15M bot.				
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
	3.5 Kpa	81.9	1-10M top	1-10M top					
	(70 psf)	(5615.0)	1-10M bot.	1-10M bot.					
			10M @ 9.5"	10M @ 9.5"					
9 metres	1.5 Kpa	75.9	1-10M top	1-10M top					
(30 feet)	(30 pst)	(5202.1)	1-10M bot.	1-10M bot.					
	0.5.16	07.0	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	87.9	1-10W top	1-10W top					
	(ou psi)	(6024.5)	1-10W DOL.	1-10M @ 0.5"					
	3.5 Kna	00.0	1-10M top	1-15M top					
	(70 nef)	(6847 0)	1-10M hot	1-15M hot					
	(10 poi)	(0011.0)	10M @ 9.5"	10M @ 4 5"					
10,5 metres	1.5 Kna	82.7	1-10M ton	1-10M top					
(35 feet)	(30 psf)	(5668.9)	1-10M bot.	1-10M bot.					
(00.000)	(** •••)	()	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	96.0	1-10M top	1-15M top					
	(50 psf)	(6581.9)	1-10M bot.	1-15M bot.					
			10M @ 9.5"	10M @ 9.5"					
	3.5 Kpa	109.3	1-10M top						
	(70 psf)	(7494.8)	1-10M bot.						
			10M @ 9.5"						
12 metres	1.5 Kpa	92.6	1-10M top						
(40 feet)	(30 psf)	(6346.2)	1-10M bot.						
			10M @ 9.5"						
	2.5 Kpa	107.7	1-10M top						
	(50 psf)	(7382.5)	1-10M bot.						
	0.5.1	400.0	10M @ 9.5"						
	3.5 Kpa	122.8	1-101/1 top						
	(70 pst)	(8418.8)	1-1UIVI DOT.						
1			1 UIVI @ 9.5						





Lintel Width = 4" (102 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

10M @ 9.5" = use one 10M stirrup @ 9.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof									
Span	load	Uniform Load			Vari	Linte	Span - Metres	(feet)	11001			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)	
3 metres	1.5 Kpa	35.1	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	
(10 feet)	(30 psf)	(2405.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	
			no stirrups	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	
	2.5 Kpa	39.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	
	(50 psf)	(2701.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	
	3.5 Kpa	43.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	
	(70 pst)	(2997.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	
4.E. matros	1 E Vpa	40.5	10W @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 6.25	10M @ 6.25	
4.5 metres	(30 ncf)	43.3	1-15M bot	1-15M bot	1-15M bot	1-15M bot	1-15M hot	1-15M hot	1-15M bot	1-2010 top	1-20101 top	
(13 1661)	(50 psi)	(2001.2)	10M @ 12 5"	10M @ 125"	10M @ 12.5"	10M @ 12.5"	10M @ 125"	10M @ 12 5"	10M @ 12.5"	10M @ 6 25"	10M @ 6 25"	
	2.5 Kna	49.6	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M ton	1-15M ton	1-20M top	1-20M ton	1-25M ton	
	(50 psf)	(3400.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	
	(******	(**** /	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
	3.5 Kpa	55.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	
	(70 psf)	(3820.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
6.0 metres	1.5 Kpa	53.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	
(20 feet)	(30 psf)	(3658.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
	2.5 Kpa	61.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top	
	(50 pst)	(4201.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	
	2 E Kno	60.0	10W @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 6.25	10M @ 6.25	10M @ 6.25	10M @ 6.25	
	3.3 Kµa (70 pcf)	(4744.2)	1-15W LUP	1-TOW LUP	1-15W lop	1-15W lop	1-15W top	1-20101 top	1-25W top	1-20W top	1-25W top	
	(70 psi)	(4744.2)	10M @ 12.5"	10M @ 125"	10M @ 12.5"	1-TJIW DUL 10M @ 12.5"	10M @ 6 25"	10M @ 6 25"	1-25Wi bot. 10M @ 6.25"	1-2JW DUL 10M @ 6.25"	10M @ 6.25"	
7.5 metres	1.5 Kna	63.0	1-15M ton	1-15M top	1-15M top	1-15M top	1-15M ton	1-20M ton	1-25M top	1-25M top	1-25M ton	
(25 feet)	(30 psf)	(4320.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	
(/	(******	(,	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
	2.5 Kpa	72.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top	
	(50 psf)	(4978.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
	3.5 Kpa	82.2	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top	1-30M top	
	(70 psf)	(5636.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
		70.0	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
9 metres	1.5 Kpa	/6.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top	
(30 teet)	(30 pst)	(5223.4)	1-15M DOL 10M @ 10.5"	1-15M DOL 10M @ 10.5"	1-15M DOL 10M @ 10.5"	1-15IVI DOL.	1-15M DOT.	1-20101 DOT.	1-25M DOL 10M @ C 05"	1-25IVI DOT.	1-30WI DOT.	
	2.5 Kna	88.2	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-20M ton	1-25M ton	1-25M ton	1-30M ton	1010 @ 0.25	
	(50 nsf)	(6045.9)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	1-25M hot	1-25M hot	1-30M hot		
	(00 poi)	(0010.0)	10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"		
	3.5 Kpa	100.2	1-15M top	1-15M top	1-15M top	1-15M top	1-25M top	1-25M top	1-25M top			
	(70 psf)	(6868.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-25M bot.	1-25M bot.	1-25M bot.			
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"			
10.5 metres	1.5 Kpa	83.0	1-15M top	1-15M top	1-15M top	1-15M top	1-25M top	1-20M top	1-25M top	1-25M top	1-30M top	
(35 feet)	(30 psf)	(5690.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-25M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.	
			10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	
	2.5 Kpa	96.3	1-15M top	1-15M top	1-15M top	1-15M top	1-25M top	1-25M top	1-25M top			
	(50 pst)	(6603.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-25M bot.	1-25M bot.	1-25M bot.			
	0.5.1/22	100.7	10M @ 12.5	10M @ 12.5	10M @ 12.5	10M @ 6.25	10M @ 6.25	10M @ 6.25	10M @ 6.25			
	3.5 Kpa (70 pof)	(7516.0)	1-15M bot	1-15M bot	1-15M bot	1-2014 top	1-201/1 LOP	1-2010 LOP				
	(10 h2l)	(1310.2)	10M @ 12 5"	10M @ 12 5"	10M @ 6 25"	10M @ 6 25"	10M @ 6 25"	10M @ 6.25"				
12 metres	1.5 Kna	92.9	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-25M ton	1-25M ton	1-25M ton	1-30M ton		
(40 feet)	(30 psf)	(6367.5)	1-15M bot	1-15M bot.	1-15M bot.	1-15M bot.	1-25M bot.	1-25M bot.	1-25M bot	1-30M bot		
(· ·····)	(··· F=·)	(10M @ 12.5"	10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"		
	2.5 Kpa	108.0	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top			
	(50 psf)	(7403.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.			
			10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"			
	3.5 Kpa	123.1	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top				
	(70 psf)	(8440.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.				
			10M @ 12.5"	10M @ 12.5"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"				





Lintel Width = 4" (102 mm) Lintel Depth = 20 (208 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 12" = use 10M stirrups @ 12" 0/C
Nome Nome <th< th=""><th>Floor Clear</th><th>Ground enow</th><th>Total Eactored</th><th></th><th></th><th>Minimum</th><th>Reinforceme</th><th>nt for Lintels</th><th>s in Load Bea</th><th>aring Walls</th><th></th><th></th></th<>	Floor Clear	Ground enow	Total Eactored			Minimum	Reinforceme	nt for Lintels	s in Load Bea	aring Walls			
Instance Image: SolutionNon-there Image: Solution <th< th=""><th>Snan</th><th>load</th><th>Uniform Load</th><th></th><th></th><th>Carry</th><th>l inte</th><th>Storey ICF +</th><th>(feet)</th><th>NUUI</th><th></th><th></th></th<>	Snan	load	Uniform Load			Carry	l inte	Storey ICF +	(feet)	NUUI			
3 here 15 Sub 33 1 10000 120000 <th>metres (feet)</th> <th>Kpa (psf)</th> <th>KN/m (lbs/ft)</th> <th>3.6 m (12 ft)</th> <th>3.9 m (13 ft)</th> <th>4.2 m (14 ft)</th> <th>4.5 m (15 ft)</th> <th>4.8 m (16 ft)</th> <th>5.1 m (17 ft)</th> <th>5.4 m (18 ft)</th> <th>5.7 m (19 ft)</th> <th>6.0 m (20 ft)</th>	metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)	
Image: style in the	3 metres	1.5 Kpa	35.1	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top				
Image: state in the state is and	(10 feet)	(30 psf)	(2405.3)	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.				
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$, , ,		. ,	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"				
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		2.5 Kpa	39.4	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top					
$ \left \begin{array}{c c c c c c c c } \hline c c c c c c c c c c c c c c c c c c $		(50 psf)	(2701.4)	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.					
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$				10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"					
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $		3.5 Kpa	43.7	1-25M top	1-25M top	1-30M top	1-30M top						
Smmtm (15 km) 15 km (20 km) 15 km (20 km) 12 km (20 km) 12 km ((70 psf)	(2997.5)	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.						
			10.5	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"	10M @ 6.25"						
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $	4.5 metres	1.5 Kpa	43.5	1-25M top	1-25M top	1-30M top	1-30M top						
$ \frac{1}{25 \text{km}} = \frac{4.6}{(20 \text{m})} + \frac{1}{(20 \text{m})} + $	(15 teet)	(30 pst)	(2981.2)	1-2010 DOL 1014 @ 6.05"	1-25IVI DOL.	1-30101 DOL.	1-30101 DOL.						
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		2.5 Kna	40.6	1.25M top	1-25M top	1_30M top	10101 @ 0.20						
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $		(50 nef)	(3/00.7)	1-25M top	1-25M hot	1-30M bot							
$ \frac{1}{100 \text{ cm}} = \frac{5.7}{(0 \text{ cm})} + \frac{5.7}{(882.2)} + \frac{5.93 \text{ fm}}{1.93 \text{ fm}} + \frac{1.930 \text{ fm}}{1.930 \text{ fm}} + 1$		(50 p31)	(0400.7)	10M @ 6 25"	10M @ 6 25"	10M @ 6.25"							
(0) with (0) with (230) with (130) with (100) with <td></td> <td>3.5 Kpa</td> <td>55.7</td> <td>1-25M top</td> <td>1-30M top</td> <td>10111 (8 0.20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		3.5 Kpa	55.7	1-25M top	1-30M top	10111 (8 0.20							
$ \frac{1}{100} \cos \left(\frac{1}{100} + $		(70 psf)	(3820.2)	1-25M bot.	1-30M bot.								
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		(- 1 - 7	(10M @ 6.25"	10M @ 6.25"								
$ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$	6.0 metres	1.5 Kpa	53.4	1-25M top	1-30M top	1-30M top							
$ \left \begin{array}{c c c c c c c c c c c c c c c c c c c $	(20 feet)	(30 psf)	(3658.5)	1-25M bot.	1-30M bot.	1-30M bot.							
$ \frac{25 \mathrm{km}}{(6 \mathrm{g} \mathrm{g} \mathrm{g})} \frac{613}{(2413)} \frac{130 \mathrm{Mp}}{100 \mathrm{g} \mathrm{g} \mathrm{g}^{3}} \frac{130 \mathrm{Mp}}{100 \mathrm{g}^{3}}$				10M @ 6.25"	10M @ 6.25"	10M @ 6.25"							
$ \left \begin{array}{cccccccccccccccccccccccccccccccccccc$		2.5 Kpa	61.3	1-30M top	1-30M top								
$ \frac{1}{100 \text{ metry}} = \frac{1}{100 \text{ m}^2 \text{ cm}^2 \text{ m}^2 $		(50 psf)	(4201.3)	1-30M bot.	1-30M bot.								
$ \frac{3}{(70 \text{ pcf})} = \frac{15 \text{ K} (474.2)}{(70 \text{ pcf})} = \frac{1-300 \text{ kbc}}{(474.2)} = \frac{1-300 \text{ kbc}}{1-300 \text{ kbc}} = \frac{1-300 \text{ kbc}}{1-100 \text{ kbc}} = \frac{1-300 \text{ kbc}}{1-300 \text{ kbc}} = \frac{1-300 \text{ kbc}}{1-3$				10M @ 6.25"	10M @ 6.25"								
		3.5 Kpa	69.2	1-30M top									
$ \frac{1}{25 \text{ key}} = \frac{15 \text{ kya}}{(30 \text{ key})} = \frac{63.0}{(430.4)} + \frac{13.0 \text{ key}}{13.0 \text{ key}} = \frac{13.0 \text{ key}}{10.0 $		(70 psf)	(4744.2)	1-30M bot.									
$ \begin{bmatrix} 1, 3 & \text{mears} \\ (25 & \text{feed}) \\ \hline (26 & f$	7.E metree	1.5.1/202	62.0	10M @ 6.25									
$ \left[\begin{array}{c c c c c c c c c c c c c c c c c c c $	(25 foot)	1.0 Kµa (20 nof)	(4220.4)	1-30IVI top									
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	(20 leet)	(50 h21)	(4320.4)	1-30W DUL 10M @ 6.25"									
$ \frac{1}{50} \frac{1}{50} \frac{1}{50} \frac{1}{50} \frac{1}{500} \frac{1}{5000} \frac{1}{1000} \frac{1}{10000} \frac{1}{100000} \frac{1}{10000000000000000000000000000000000$		2.5 Kna	72.6	1-30M ton									
$ \frac{1}{100} = 1$		(50 nsf)	(4978.4)	1-30M bot.									
$ \frac{35 \text{ Kpa}}{(70 \text{ ps})} = \frac{82.2}{(566.4)} \\ \frac{9 \text{ metres}}{(30 \text{ res})} = \frac{15 \text{ Kpa}}{(50 \text{ ss})} = \frac{76.2}{(6223.4)} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{88.2}{(6045.9)} \\ \frac{35 \text{ Kpa}}{(70 \text{ ps})} = \frac{100.2}{(686.4)} \\ \frac{35 \text{ Kpa}}{(70 \text{ ps})} = \frac{100.2}{(686.4)} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{88.0}{(6603.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{96.3}{(6603.2)} \\ \frac{25 \text{ Kpa}}{(70 \text{ ps})} = \frac{96.3}{(6603.2)} \\ \frac{35 \text{ Kpa}}{(70 \text{ ps})} = \frac{10.97}{(75 \text{ rs}.2)} \\ \frac{12 \text{ metres}}{(30 \text{ ps})} = \frac{15 \text{ Kpa}}{(50 \text{ ps})} = \frac{92.9}{(6367.5)} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{10.8}{(50 \text{ ps})} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{10.8}{(50 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ ps})} = \frac{10.8}{(50 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(70 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(70 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(70 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ rs}.2)} \\ \frac{10.8}{(50 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ rs}.2)} \\ \frac{10.8}{(50 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ rs}.2)} \\ \frac{10.8}{(50 \text{ rs}.2)} \\ \frac{25 \text{ Kpa}}{(50 \text{ rs}.2)} \\ \frac{10.8}{(50 $		(()	10M @ 6.25"									
Image: series (0 in error series (0 in		3.5 Kpa	82.2										
Image: constraint of the sector of		(70 psf)	(5636.4)										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $													
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	9 metres	1.5 Kpa	76.2										
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	(30 feet)	(30 psf)	(5223.4)										
$ \begin{bmatrix} 2.5 & \text{Kpa} \\ (50 & \text{psf}) \\ (50 & \text{psf}) \\ \hline \\ 3.5 & \text{Kpa} \\ (70 & \text{psf}) \\ \hline \\ (56 & \text{psf}) \\ \hline \\ (50 & \text{psf}) \\ \hline \\ (50 & \text{psf}) \\ \hline \\ (50 & \text{psf}) \\ \hline \\ (70 & \text{psf}) \\ \hline \\ (151 & \text{psf}) \\ \hline \\ \\ (151 & \text{psf}) \\ \hline \\ \\ (151 & \text{psf}$													
$ \frac{1}{105 \text{ metres}} = \frac{1}{(0 \text{ ps})} = \frac{102}{(50 \text{ ps})} = \frac{15 \text{ Kpa}}{(50 \text{ ps})} = \frac{33.0}{(50 \text{ ps})} = \frac{33.0}{(50 \text{ ps})} = \frac{33.0}{(50 \text{ ps})} = \frac{35 \text{ Kpa}}{(50 \text{ ps})} = \frac{96.3}{(50 \text{ ps})} = \frac{10.5 \text{ metres}}{(50 p$		2.5 Kpa	88.2										
$ \frac{3.5 \text{ Kpa}}{(70 \text{ ps})} = \frac{10.2}{(6868.4)} = \frac{10.2}{(6869.3)} = \frac{10.2}{(70.2)} = \frac$		(50 pst)	(6045.9)										
$\frac{1}{(70 \text{ ps})} = \frac{1002}{(6668.4)} = \frac{1002}{(5690.3)} = 10$		2.5. Kno	100.2										
10.5 metres (35 feet) 1.5 Kpa (30 psf) 83.0 (5690.3) 83.0 (5690.3) 96.3 (6603.2) 96.3 (7516.2) 97.3 (7516.2) <		0.0 Kµd (70 nef)	(6868.4)										
10.5 metres (35 feet) 1.5 Kpa (30 psf) 83.0 (5690.3) 83.0 (5690.3) 83.0 (5690.3) 96.3 (6603.2) 96.3 (7516.2) 96.		(70 psi)	(0000.4)										
(35 feet) (30 pst) (5690.3) <t< td=""><td>10.5 metres</td><td>1.5 Kpa</td><td>83.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	10.5 metres	1.5 Kpa	83.0										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(35 feet)	(30 psf)	(5690.3)										
2.5 kpa 96.3 6603.2) 109.7 7(70 psi) 109.7 7(7516.2) 109.7 7(7516.2) 109.7 </td <td>(,</td> <td>(</td> <td>(,</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	(,	((,										
Image: [50 psf) (6603.2) Image: [6603.2) Image:		2.5 Kpa	96.3										
$\frac{1}{3.5 \text{ kpa}} = \frac{100.7}{(70 \text{ psf})} = \frac{100.7}{(7516.2)}$ $\frac{12 \text{ metres}}{(40 \text{ feet})} = \frac{1.5 \text{ kpa}}{(30 \text{ psf})} = \frac{92.9}{(6367.5)}$ $\frac{2.5 \text{ kpa}}{(7403.9)} = \frac{100.7}{(7403.9)}$ $\frac{2.5 \text{ kpa}}{(7403.9)} = \frac{100.7}{(7403.9)}$ $\frac{100.7}{(7403.9)} = \frac{100.7}{(7403.9)}$		(50 psf)	(6603.2)										
3.5 Kpa 109.7 (70 psf) (7516.2) 12 metres 1.5 Kpa (40 feet) (6367.5) 2.5 Kpa 108.0 (50 psf) (7403.9) 3.5 Kpa 123.1													
Image:		3.5 Kpa	109.7										
I 2 metres I 5 Kpa 92.9 6367.5 I 08.0 I 08.0 <th 108.0<<="" td=""><td></td><td>(70 psf)</td><td>(7516.2)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td></td> <td>(70 psf)</td> <td>(7516.2)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		(70 psf)	(7516.2)									
12 merres 1.3 kpa 52.9 (40 feet) (30 psf) (6367.5) 2.5 kpa 108.0 (50 psf) (7403.9) 3.5 kpa 123.1	10	4.5.1	00.0										
(40 feet) (30 psf) (6367.5) 2.5 Kpa 108.0 (50 psf) (7403.9) 3.5 Kpa 123.1	12 metres	1.5 Kpa	92.9										
2.5 Kpa 108.0 (50 psf) (7403.9) 3.5 Kpa 123.1	(40 feet)	(30 pst)	(6367.5)										
2.5 кра 100.0 (50 psf) (7403.9) 3.5 Кра 123.1		9.5.Km	100.0										
100 party (1400.3) 3.5 Kpa 123.1		2.0 Nµa (50 nef)	100.0 (7/02.0)										
3.5 Kpa 123.1		(an hai)	(1400.0)										
		3,5 Kna	123.1										
(70 psf) (8440.2)		(70 psf)	(8440.2)										





Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 12" = use 10M stirrups @ 12" 0/C

Elear Clear	Ground onow	Total Eastarad			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Snan	load	Iniform I oad			Carry	Linte	Storey ICF +	(feet)	NUUI		
metres (feet)	Kna (nsf)	KN/m (lhs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	35.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top
(10 feet)	(30 psf)	(2425.9)	1-15M bot	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.
			No stirrups	No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	39.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top
	(50 psf)	(2722.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.
			No stirrups	No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	3.5 Kpa	44.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top
	(70 psf)	(3018.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.
4.E. matros	1 E Vpa	40.0	NO STIFFUPS	NO STIFFUPS	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15
4.0 IIIelies	1.0 Kµa (30 ncf)	43.0	1-15W top	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-15W top	1-15W top	1-15W bot	1-20101 t0p
(13 1661)	(50 psi)	(3001.0)	No stirruns	No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kna	49.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M ton	1-15M ton	1-15M top	1-20M top	1-20M ton
	(50 psf)	(3421.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
	((0.2.00)	No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"
	3.5 Kpa	56.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
	(70 psf)	(3840.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
			No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"
6.0 metres	1.5 Kpa	53.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
(20 feet)	(30 psf)	(3679.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
			No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	61.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top
	(50 pst)	(4221.9)	1-15IVI DOT.	1-15IVI DOL.	1-15IVI DOT.	1-15M DOT.	1-15M DOT.	1-15W DOT.	1-2010 DOT.	1-20101 DOT.	1-25M DOT.
	3.5 Kna	60.5	1-15M top	1.15M top	1.15M top	1.15M top	1.15M top	10101 @ 15	1-20M top	1.25M top	1.25M top
	(70 nef)	(4764.7)	1-15M top	1-15M bot	1-15M bot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	1-25M hot	1-25M hot
	(10 p31)	(101.1)	No stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
7.5 metres	1.5 Kpa	63.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top
(25 feet)	(30 psf)	(4341.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.
× ,	,	· · /	No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	72.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top
	(50 psf)	(4999.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.
			No stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	3.5 Kpa	82.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	1-25M top	1-25M top
	(70 psf)	(5657.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.
0 matras	1 E Vpa	70 5	No stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 7.5	10M @ 7.5	10M @ 7.5	10M @ 7.5
(20 feet)	1.0 Kµa (30 ncf)	(5244.0)	1-15W top	1-15M bot	1-15M bot	1-15M bot	1-15W top	1-20101 top	1-20101 top	1-25W bot	1-25W top
(50 1661)	(50 psi)	(3244.0)	No stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	88.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-30M top
	(50 psf)	(6066.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-30M bot.
	,	· · /	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	3.5 Kpa	100.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	
	(70 psf)	(6889.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	
			10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	
10.5 metres	1.5 Kpa	83.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top	1-25M top
(35 feet)	(30 psf)	(5710.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.
	0.5.1/22	00.0	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"
	2.5 Kpa	90.0	1-15W top	1-15W top	1-15IVI top	1-15W top	1-15W top	1-201VI top	1-25IVI top	1-25IVI top	
	(ou hei)	(0023.0)	1-10W DUL	1-15IVI DUL.	1-15IVI DUL.	1-15WI DUL.	1-15WI DUL.	1-20W DOL.	1-25WI DUL.	1-25WI DUL.	
	3.5 Kna	110.0	1-15M ton	1-15M top	1-15M top	1-15M ton	1-20M ton	1-25M ton	1-25M ton	10101 @ 7.5	
	(70 nsf)	(7536.8)	1-15M hot	1-15M bot	1-15M bot	1-15M hot	1-20M hot	1-25M hot	1-25M hot		
	(por)	(10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"		
12 metres	1.5 Kpa	93.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-25M top	1-25M top	1-25M top	
(40 feet)	(30 psf)	(6388.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-25M bot.	1-25M bot.	1-25M bot.	
			10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	
	2.5 Kpa	108.3	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top	1-25M top		
	(50 psf)	(7424.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-25M bot.	1-25M bot.		
	0.5.11	400.1	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"		
	3.5 Kpa	123.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-25M top			
	(70 pst)	(8400.8)	1-101 IVI DOT. 1014 @ 15"	1-100 MCL.	1-100 MCL.	1-1010 DOT.	1-201VI DOT.	1-2011 DOT.			
1			10101 @ 10	10101 @ 10	10101 @ 10	1.01VI @ 1.3	10IVI @ 1.3	10W @ 7.3			





Lintel Width = 4" (102 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) **Legend** 1-15M top = top rebar 1-15M bot.= bottom rebar

1-15M bot.= bottom rebar 10M @ 15" = use 10M stirrups @ 15" O/C

	Cround onour	Total Fastarad			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Floor Clear	Ground Snow	Iotal Factored			Carry	ing Second :	Storey ICF +	Light Frame	Root		
opan metres (feet)	Kna (nsf)	KN/m (lhs/ft)	3.6 m (12 ft)	3 9 m (13 ft)	4 2 m (14 ft)	4.5 m (15 ft)	4 8 m (16 ft)	5 1 m (17 ft)	5.4 m (18 ft)	5 7 m (19 ft)	6 0 m (20 ft)
3 metres	1.5 Kpa	35.4	1-20M top	1-20M top	1-25M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top	0.0 11 (20 11)
(10 feet)	(30 psf)	(2425.9)	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.	
· · /	(. ,	. ,	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	
	2.5 Kpa	39.7	1-20M top	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top		
	(50 psf)	(2722.0)	1-20M bot.	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.		
			10M @ 15"	10M @ 15"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"		
	3.5 Kpa	44.0	1-20M top	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top			
	(70 pst)	(3018.1)	1-20M bot.	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.			
4.5 motros	1.5 Kpg	42.0	10M @ 7.5	10M @ 7.5	10M @ 7.5	10M @ 7.5	10M @ 7.5	10M @ 7.5			
4.5 metres (15 feet)	(30 nsf)	43.0	1-2010 top	1-25M hot	1-25M hot	1-25M hot	1-30M hot	1-30M hot			
(101000)	(00 p31)	(0001.0)	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"			
	2.5 Kpa	49.9	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top	10111 6 1.0			
	(50 psf)	(3421.3)	1-25M bot.	1-25M bot.	1-25M bot.	1-20M bot.	1-30M bot.				
	,	. ,	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"				
	3.5 Kpa	56.0	1-25M top	1-25M top	1-25M top	1-30M top	1-30M top				
	(70 psf)	(3840.7)	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.	1-30M bot.				
			10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"				
6.0 metres	1.5 Kpa	53.7	1-25M top	1-25M top	1-25M top	1-30M top					
(20 feet)	(30 psf)	(3679.1)	1-25M bot.	1-25M bot.	1-25M bot.	1-30M bot.					
	0.5.1/22	01.0	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"					
	2.5 Kpa (50 psf)	01.0	1-25W top	1-25W top	1-30W top	1-301VI top					
	(ou hei)	(4221.9)	10M @ 7.5"	1-25W DOL 10M @ 7.5"	1-30W DOL 10M @ 7.5"	1-30W DOL 10M @ 7.5"					
	3.5 Kna	69.5	1-25M top	1-30M top	1-30M top	10101 @ 7.5					
	(70 psf)	(4764.7)	1-25M bot.	1-30M bot.	1-30M bot.						
	X · F · 7	(· · /	10M @ 7.5"	10M @ 7.5"	10M @ 7.5"						
7.5 metres	1.5 Kpa	63.3	1-25M top	1-30M top	1-30M top						
(25 feet)	(30 psf)	(4341.0)	1-25M bot.	1-30M bot.	1-30M bot.						
			10M @ 7.5"	10M @ 7.5"	10M @ 7.5"						
	2.5 Kpa	72.9	1-25M top	1-30M top							
	(50 psf)	(4999.0)	1-25M bot.	1-30M bot.							
	0.5.1/22	00.5	10M @ 7.5"	10M @ 7.5"							
	(70 ncf)	(5657.0)	1-30M bot								
	(70 psi)	(3037.0)	10M @ 7.5"								
9 metres	1.5 Kpa	76.5	1-30M top								
(30 feet)	(30 psf)	(5244.0)	1-30M bot.								
			10M @ 7.5"								
	2.5 Kpa	88.5									
	(50 psf)	(6066.5)									
		100.5									
	3.5 Kpa	100.5									
	(70 psi)	(6889.0)									
10.5 metres	1.5 Kna	83.3	1-30M top								
(35 feet)	(30 psf)	(5710.8)	1-30M bot.								
· · /	(. ,	. ,	10M @ 7.5"								
	2.5 Kpa	96.6									
	(50 psf)	(6623.8)									
	3.5 Kpa	110.0									
	(70 pst)	(/536.8)									
12 metres	1.5 Kna	Q3 2									
(40 feet)	(30 nsf)	(6388.1)									
(101000)	(00 por)	(0000.1)									
	2.5 Kpa	108.3									
	(50 psf)	(7424.4)									
	3.5 Kpa	123.4									
	(70 psf)	(8460.8)									





Lintel Width = 4" (102 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 15" = use 10M stirrups @ 15" 0/C



Floor Clear	Ground snow	Total Factored			Minimum Carry	Reinforceme /ing Second	nt for Lintels Storey ICF +	s in Load Bea Light Frame	aring Walls Roof		
Span	load	Uniform Load				Linte	l Span - Metres	(feet)			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	40.5	1-10M top	1-10M top	1-15M top	1-15M top					
(10 feet)	(30 psf)	(2774.4)	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.					
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	2.5 Kpa	44.8	1-10M top	1-10M top	1-15M top	1-15M top					
	(50 psf)	(3070.5)	1-10M bot.	1-10M bot.	1-15M bot.	1-15M bot.					
	0.E. Kno	40.1	10M @ 5.5	10M @ 5.5	10M @ 5.5	10M @ 5.5					
	3.3 Kµd (70 nef)	43.1	1-10M hot	1-10M bot	1-15M bot						
	(70 psi)	(3300.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
4.5 metres	1.5 Kpa	48.9	1-10M top	1-15M top	1-15M top						
(15 feet)	(30 psf)	(3350.3)	1-10M bot.	1-15M bot.	1-15M bot.						
, , ,	,	. ,	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	2.5 Kpa	55.0	1-10M top	1-15M top	1-15M top						
	(50 psf)	(3769.8)	1-10M bot.	1-15M bot.	1-15M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	61.1	1-10M top	1-15M top							
	(70 psf)	(4189.2)	1-10M bot.	1-15M bot.							
6.0 metros	1.5.1/202	50.0	10M @ 5.5	10M @ 5.5							
(20 feet)	1.0 Kµa (30 nef)	0.0 (4027 6)	1-10M bot	1-15W top							
(20 1661)	(50 psi)	(4027.0)	10M @ 5.5"	10M @ 5.5"							
	2.5 Kpa	66.7	1-10M top	1-15M top							
	(50 psf)	(4570.4)	1-10M bot.	1-15M bot.							
	/	· · /	10M @ 5.5"	10M @ 5.5"							
	3.5 Kpa	74.6	1-10M top								
	(70 psf)	(5113.2)	1-10M bot.								
			10M @ 5.5"								
7.5 metres	1.5 Kpa	68.4	1-10M top	1-15M top							
(25 feet)	(30 pst)	(4689.5)	1-10M bot.	1-15M bot.							
	2.5.Kpg	79.0	10M @ 5.5	10M @ 5.5							
	(50 nsf)	(5347.5)	1-10M top								
	(00 poi)	(0011.0)	10M @ 5.5"								
	3.5 Kpa	87.6	1-10M top								
	(70 psf)	(6005.5)	1-10M bot.								
			10M @ 5.5"								
9 metres	1.5 Kpa	81.6	1-10M top								
(30 feet)	(30 psf)	(5592.5)	1-10M bot.								
	0 E 1/pa	02.6	10M @ 5.5								
	2.0 Kµa (50 nef)	93.0	1-10M bot								
	(50 psi)	(0413.0)	10M @ 5.5"								
	3.5 Kpa	105.6	10111 (5 0.0								
	(70 psf)	(7237.5)									
	,	· · /									
10.5 metres	1.5 Kpa	88.4	1-10M top								
(35 feet)	(30 psf)	(6059.4)	1-10M bot.								
			10M @ 5.5"								
	2.5 Kpa	101.7	1-15M top								
	(50 pst)	(69/2.3)	1-15W DOT.								
	3 5 Kna	115.0	10101@ 0.0								
	(70 nsf)	(7885.3)									
	(por)	(
12 metres	1.5 Kpa	98.3	1-15M top								
(40 feet)	(30 psf)	(6736.6)	1-15M bot.								
			10M @ 5.5"								
	2.5 Kpa	113.4									
	(50 psf)	(7772.9)									
	0 5 1/	100 5									
	3.3 Kpa (70 pof)	120.0 (8800.2)									
	(/ u h2i)	(0009.3)									



6″ (152mm)

Lintel Width = 6" (203 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 5.5" = use one 10M stirrup @ 5.5" O/C

					Minimum	Reinforceme	nt for Lintels	s in Load Bea	aring Walls		
Floor Clear	Ground snow	Iotal Factored			Carry	ying Second	Storey ICF +	Light Frame	Roof		
Span	load	Uniform Load	0.0	4.0	4.5	Linte	Span - Metres	(feet)	0.7 (0.6)	0.0	0.0
metres (reet)	Kpa (psr)	KN/M (IDS/Π)	U.9 M (3 π)	1.2 m (4 π)	1.5 m (5 π)	1.8 m (6 π)	2.1 m (/ π)	2.4 m (8 π)	2.7 m (9 π)	3.0 m (10 π)	3.3 m (11 π)
3 IIIelies	1.0 Kµa (20 nof)	40.7	1-15IVI LUP	1-TOW LUP	1-TOWILUP	1-TOW LOP	1-15W LOP	1-20W lop			
(TU teet)	(ou hei)	(2790.3)	1-10W DUL	1-15IVI DUL.	1-15IVI DUL.	1-10W @ 7"	1-15WI DUL.	1-20101 DUL. 10M @ 7"			
	2.5 Kna	45.0	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	TUNI®7			
	2.0 Kµd (50 pcf)	40.0	1 15M bot	1 15M bot	1 15M bot	1 15M bot	1-20W top				
	(ou hei)	(3000.4)	10M @ 7"	1-15W DUL 10M @ 7"	1-15W DUL 10M @ 7"	1-TJW DUL 10M @ 7"	1-20W DUL				
	3.5 Kna	10.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top				
	(70 nsf)	(3382.5)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot				
	(10 p31)	(0002.0)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"				
4.5 metres	1.5 Kna	49.1	1-15M ton	1-15M top	1-15M top	1-15M top	1-20M top				
(15 feet)	(30 nsf)	(3366.2)	1-15M hot	1-15M hot	1-15M bot	1-15M bot	1-20M bot				
(101000)	(00 poi)	(0000.2)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"				
	2.5 Kpa	55.2	1-15M top	1-15M top	1-15M top	1-15M top					
	(50 psf)	(3785.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.					
	((****)	10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"					
	3.5 Kpa	61.4	1-15M top	1-15M top	1-15M top						
	(70 psf)	(4205.2)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"						
6.0 metres	1.5 Kpa	59.0	1-15M top	1-15M top	1-15M top	1-15M top					
(20 feet)	(30 psf)	(4043.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.					
			10M @ 7"	10M @ 7"	10M @ 7"	10M @ 7"					
	2.5 Kpa	66.9	1-15M top	1-15M top	1-15M top						
	(50 psf)	(4586.3)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"						
	3.5 Kpa	74.8	1-15M top	1-15M top							
	(70 psf)	(5129.2)	1-15M bot.	1-15M bot.							
			10M @ 7"	10M @ 7"							
7.5 metres	1.5 Kpa	68.7	1-15M top	1-15M top	1-15M top						
(25 feet)	(30 psf)	(4705.4)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 7"	10M @ 7"	10M @ 7"						
	2.5 Kpa	78.3	1-15M top	1-15M top							
	(50 psf)	(5363.4)	1-15M bot.	1-15M bot.							
		07.0	10M @ 7"	10M @ 7"							
	3.5 Kpa	87.9	1-15M top	1-15M top							
	(70 pst)	(6021.4)	1-15W DOT.	1-15M DOT.							
0 matros	1 E Kaa	01.0	10W @ 7	10M @ /							
9 Inelies	1.0 Kµa (20 nof)	01.0	1-15IVI LUP	1-TOW LUP							
(30 leet)	(ou hei)	(3000.4)	10M @ 7"	1-15W DUL 10M @ 7"							
	2.5 Kna	03.8	1-15M ton	1-15M top							
	(50 nsf)	(6/130.9)	1-15M hot	1-15M hot							
	(00 p31)	(0100.0)	10M @ 7"	10M @ 7"							
	3.5 Kna	105.8	1-15M ton	1011 01							
	(70 psf)	(7253.4)	1-15M bot.								
	\ · F='/	,,	10M @ 7"								
10.5 metres	1.5 Kpa	88.6	1-15M top	1-15M top							
(35 feet)	(30 psf)	(6075.3)	1-15M bot.	1-15M bot.							
			10M @ 7"	10M @ 7"							
	2.5 Kpa	102.0	1-15M top								
	(50 psf)	(6988.2)	1-15M bot.								
			10M @ 7"								
	3.5 Kpa	115.3	1-15M top								
	(70 psf)	(7901.2)	1-15M bot.								
			10M @ 7"								
12 metres	1.5 Kpa	98.5	1-15M top								
(40 feet)	(30 psf)	(6752.5)	1-15M bot.								
			10M @ 7"								
	2.5 Kpa	113.6	1-15M top								
	(50 psf)	(7788.9)	1-15M bot.								
		107.7	10M @ 7"								
	3.5 Kpa	128.8	1-15M top								
	(70 pst)	(8825.2)	1-15M bot.								
1			1UM @ /								



6″ (152mm)

Lintel Width = 6" (203 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar 10M @ 7" = use one 10M stirrup @ 7" 0/C

Floor Clear	Ground enow	Total Factored			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Span	load	Uniform Load			Carry	Linte	Span - Metres	(feet)			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	41.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top
(10 feet)	(30 psf)	(2822.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"
	2.5 Kpa	45.5	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	
	(50 psf)	(3118.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	
	0.5.1/22	40.0	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	
	3.5 Kpa	49.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top		
	(70 psi)	(3414.4)	1-10W DUL	1-15WI DUL 10M @ 0.5"	1-15IVI DUL. 10M @ 0.5"	1-15WI DUL. 10M @ 0.5"	1-15W DUL 10M @ 0.5"	1-20101 DOL.	1-20W DOL 10M @ 0.5"		
4.5 metres	1.5 Kna	49.6	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-15M ton	1-20M ton	1-20M ton		
(15 feet)	(30 psf)	(3398.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.		
()	(** ***)	()	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"		
	2.5 Kpa	55.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top			
	(50 psf)	(3817.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.			
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
	3.5 Kpa	61.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top			
	(70 psf)	(4237.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.			
C 0	1 5 Kaa	50.5	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
6.0 metres	1.5 Kpa (20 pcf)	09.0 (4075-2)	1-15W t0p	1-15W top	1-15W top	1-15W top	1-20M hot	1-20IVI top			
(20 1661)	(50 psi)	(4073.3)	no stirruns	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"			
	2.5 Kpa	67.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1010 8 0.0			
	(50 psf)	(4618.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.				
	(******	(,	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"				
	3.5 Kpa	75.3	1-15M top	1-15M top	1-15M top	1-15M top					
	(70 psf)	(5161.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
7.5 metres	1.5 Kpa	69.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top				
(25 feet)	(30 pst)	(4737.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.				
	2.5.Kpg	70 7	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5				
	2.0 Kµa (50 nsf)	(5395.2)	1-15M hot	1-15W top	1-15W top	1-15W top					
	(50 p31)	(0000.2)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	3.5 Kpa	88.3	1-15M top	1-15M top	1-15M top	1-20M top					
	(70 psf)	(6053.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
9 metres	1.5 Kpa	82.3	1-15M top	1-15M top	1-15M top	1-15M top					
(30 feet)	(30 psf)	(5640.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	94.3	1-15M top	1-15M top	1-15M top						
	(ou psi)	(0402.8)	1-15W DOL 10M @ 0.5"	1-15WI DOL 10M @ 0.5"	1-15IVI DOL.						
	3.5 Kna	106.3	1-15M ton	1-15M ton	1-15M ton						
	(70 psf)	(7285.2)	1-15M bot.	1-15M bot.	1-15M bot.						
	(- P-)	(···)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
10.5 metres	1.5 Kpa	89.1	1-15M top	1-15M top	1-15M top						
(35 feet)	(30 psf)	(6107.1)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	2.5 Kpa	102.4	1-15M top	1-15M top	1-15M top						
	(50 psf)	(7020.1)	1-15M bot.	1-15M bot.	1-15M bot.						
	2.5.Kpg	115.7	10M @ 9.5	10M @ 9.5	10M @ 9.5						
	(70 nef)	(7933.0)	1-15M top	1-15M hot	1-15M bot						
	(i o hoi)	(1000.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
12 metres	1.5 Kpa	99.0	1-15M top	1-15M top	1-15M top						
(40 feet)	(30 psf)	(6784.4)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	2.5 Kpa	114.1	1-15M top	1-15M top	1-15M top						
	(50 psf)	(7820.7)	1-15M bot.	1-15M bot.	1-15M bot.						
	0.5.11	400.0	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	3.5 Kpa	129.2	1-15M top	1-15M top							
	(70 psi)	(0.1000)	1-10W DOL 10M @ 0.5"	1-10W DOL 10M @ 0.5"							
			10101 & 3.0	10101 @ 3.0							



(355mm)

14~



Lintel Width = 6" (203 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Floor Clear	Ground enow	Total Eactored			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Snan	load	Uniform Load			Vall	Linte	Soan - Metres	(feet)	NUUI		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	41.6	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
(10 feet)	(30 psf)	(2854.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
			no stirrups	no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"
	2.5 Kpa	46.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top
	(50 psf)	(3150.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.
	0.5.1/22	50.0	no stirrups	no stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12
	3.3 Kµa (70 pcf)	(3446-2)	1-15W top	1-15M bot	1-15W top	1-15W top	1-15W top	1-15W top	1-20101 t0p	1-20101 t0p	2-15W top 2-15M bot
	(70 psi)	(0440.2)	no stirruns	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"
4.5 metres	1.5 Kpa	50.0	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top
(15 feet)	(30 psf)	(3429.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"
	2.5 Kpa	56.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top
	(50 psf)	(3849.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"
	3.5 Kpa	62.3	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-20M top
	(70 pst)	(4208.8)	I-IOW DOL	I-ISIVI DOL	1-15IVI DOL.	1-15IVI DOL.	1-10W DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL.	1-20₩ DOL. 10M @ 6"
6.0 metres	1.5 Kna	59.9	1-15M ton	1-15M top	1-15M top	1-15M ton	1-15M ton	1-15M ton	1-20M top	2-10W @ 0	2-15M ton
(20 feet)	(30 psf)	(4107.2)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.
()	(******		no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	2-10M @ 6"
	2.5 Kpa	67.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top
	(50 psf)	(4650.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"
	3.5 Kpa	75.8	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top
	(70 pst)	(5192.8)	1-15M DOL	1-15M DOL 10M @ 10"	1-15M DOL.	1-15M DOL 10M @ 10"	1-15M DOT.	1-20M DOT.	2-15M DOL	1-25M DOT.	2-20101 DOT.
7.5 metres	1.5 Kna	60.6	1-15M top	1.15M top	1.15M top	1.15M top	1.15M top	1-20M top	2-10W @ 6	2-15M top	2-10WI@0 1-25M top
(25 feet)	(30 nsf)	(4769 1)	1-15M hot	1-15M hot	1-15M bot	1-15M hot	1-15M hot	1-20M hot	1-20M hot	2-15M hot	1-25M hot
(201001)	(00 poi)	(1100.1)	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"
	2.5 Kpa	79.2	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top
	(50 psf)	(5427.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"
	3.5 Kpa	88.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	1-25M top	1-30M top
	(70 pst)	(6085.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	1-30M bot.
9 metres	1.5 Kna	82.8	1-15M ton	1-15M top	1-15M ton	1-15M top	1-20M ton	1-20M ton	2-10W @ 0 2-15M ton	1-25M ton	2-20M ton
(30 feet)	(30 psf)	(5672.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.
()	(** ***)	()	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"
	2.5 Kpa	94.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top	1-30M top
	(50 psf)	(6494.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	2-10M @ 6"	10M @ 6"
	3.5 Kpa	106.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top	1-25M+1-15M top	
	(70 pst)	(7317.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M+1-15M bot.	
10.5 metrec	1.5 Kna	80.6	1-15M top	1.15M top	1.15M top	1.15M top	1.20M top	2-10W @ 0	2-10W @ 0	2-10W @ 0	
(35 feet)	(30 nsf)	(6139.0)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M top	2-15M top 2-15M hot	1-25M hot	1-25M hot	
(00 1001)	(00 poi)	(0100.0)	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"	10M @ 6"	
	2.5 Kpa	102.9	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(50 psf)	(7051.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			no stirrups	10M @ 12"	10M @ 12″	10M @ 12"	10M @ 6"	2-10M @ 6"	10M @ 6"	2-10M @ 6"	
	3.5 Kpa	116.2	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-20M top	1-25M+1-15M top	
	(70 psf)	(7964.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-20M bot.	1-25M+1-15M bot.	
10 motors	15 //	00.4	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	
12 INETIES	1.5 Kpa (30 pof)	99.4 (6816 0)	1-15M top	1-15M top	1-15M top	1-15M top	1-2014 top	2-15M top 2-15M bot	1-25M top	2-20M top	
(40 1861)	(ou hei)	(0010.2)	1°15IWI DUL. 10M @ 12"	10M @ 12"	1°10W DUL 10M @ 19"	1°10W DUL 10M @ 19"	10M @ 6"	2-10W DUL 2-10M @ 6"	10M @ 6"	2-2010 DUL 2-10M @ 6"	
	2.5 Kpa	114.6	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	2-20M top	1-25M+1-15M ton	
	(50 psf)	(7852.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-20M bot.	1-25M+1-15M bot.	
	/	. ,	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	
	3.5 Kpa	129.7	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top		
	(70 psf)	(8888.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.		
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 6.25"	2-10M @ 6"	10M @ 6"	2-10M @ 6"		



(452mm

` ©



Lintel Width = 6" (152 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 6" = use two 10M stirrups @ 6" 0/C

17.8″

20

ہے ک

6″ (152mm)

20 ~

لھ

6″ (152mm)

Floor Clear	Ground snow	Total Factored			Minimum Carry	Reinforceme ving Second	nt for Lintels Storey ICF +	s in Load Bea Light Frame	aring Walls Roof		
Span motros (foot)	load Kno (nof)	Uniform Load	2.6 m (10.#)	2.0 m (12.#)	4.0 m (14.6)	Linte	Span - Metres	(feet)	E 4 m (10 ft)	E 7 m (10 ft)	6 0 m (20 #)
3 metres	1.5 Kna	41.6	2-15M ton	3.9 m (13 m) 2-15М ton	4.2 m (14 π) 1-25M ton	4.5 m (15 m) 2-20M ton	4.8 m (10 π) 1-30M ton	5.ΙΜ(Ι/Π)	5.4 m (18 n)	5.7 m (19 π)	6.0 m (20 π)
(10 feet)	(30 psf)	(2854.0)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.				
()	(*****)	(2-10M @ 12"	2-10M @ 12"	10M @ 12"	2-10M @ 6"	10M @ 6"				
	2.5 Kpa	46.0	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top				
	(50 psf)	(3150.1)	2-15M bot.	1-25M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.				
		50.0	2-10M @ 12"	10M @ 12"	10M @ 6"	2-10M @ 6"	2-10M @ 6"				
	3.5 Kpa	50.3	2-15M top	1-25M top	2-20M top	1-30M top					
	(70 psi)	(3440.2)	2-10M @ 12"	10M @ 6"	2-2010 DOL 2-10M @ 6"	10M @ 6"					
4.5 metres	1.5 Kpa	50.0	2-15M top	1-25M top	2-20M top	1-30M top					
(15 feet)	(30 psf)	(3429.9)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.					
			2-10M @ 12"	10M @ 6"	2-10M @ 6"	10M @ 6"					
	2.5 Kpa	56.2	1-25M top	2-20M top	1-30M top						
	(50 pst)	(3849.4)	1-25M bot.	2-20M bot.	1-30M bot.						
	3.5 Kna	62.3	1.25M ton	2-10101@0	TUM @ 6						
	(70 nsf)	(4268.8)	1-25M hot	1-30M hot							
	(()	10M @ 6"	10M @ 6"							
6.0 metres	1.5 Kpa	59.9	1-25M top	2-20M top	1-25M+1-15M top						
(20 feet)	(30 psf)	(4107.2)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.						
			10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	2.5 Kpa	67.8	2-20M top	1-25M+1-15M top							
	(50 psi)	(4000.0)	2-20W DUL 2-10M @ 6"	2-10M @ 6"							
	3.5 Kpa	75.8	1-30M top	2 1011 8 0							
	(70 psf)	(5192.8)	1-30M bot.								
			10M @ 6"								
7.5 metres	1.5 Kpa	69.6	2-20M top	1-25M+1-15M top							
(25 feet)	(30 psf)	(4769.1)	2-20M bot.	1-25M+1-15M bot.							
	2.5 Kna	70.2	2-10M @ b	2-10M @ 6							
	(50 nsf)	(5427.1)	1-30M bot.								
	()	(******	10M @ 6"								
	3.5 Kpa	88.8									
	(70 µsi)	(0005.1)									
9 metres	1.5 Kpa	82.8									
(30 feet)	(30 psf)	(5672.1)									
	2.5 Kpa	94.8									
	(ou psi)	(6494.6)									
	3.5 Kpa	106.8									
	(70 psf)	(7317.1)									
		. ,									
10.5 metres	1.5 Kpa	89.6									
(35 feet)	(30 psf)	(6139.0)									
	0.5.Km	102.0									
	2.3 Kµa (50 nsf)	(7051.9)									
	(00 poi)	(7001.0)									
	3.5 Kpa	116.2									
	(70 psf)	(7964.9)									
12 metres	1.5 Kpa	99.4									
(40 1661)	(30 psi)	(0010.2)									
	2.5 Kpa	114.6									
	(50 psf)	(7852.5)									
	3.5 Kpa	129.7									
	(70 psf)	(8888)									
	T ê	_[]Ê		Lintel Width = 6	~ (152 mm)		Legend		
	Smr	<u> </u>	8 8	2m		Lintel Depth = 2	0″ (508 mm)		1-15M top = top	rebar	
008	42	<u>08</u> r	14 - 15	42		Effective Depth :	= 17.8″ (452 mm)	1-15M bot.= bot	tom rebar	una @ 10″ 0/0
(2		(5	5	*		Fu @ 26 uays = Fy = 400 Mpa (6	20 ivipa 60 ksi)		∠-i∪ivi @ ö = Ü	SE IND I UNI S[[[]	uµs⊛i2 U/G

	0	Total Fastered			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Floor Clear	GLORING SUDA	Iotal Factored			Carry	linta	Storey ICF +	Light Frame	ROOT		
metres (feet)	Kna (nsf)	KN/m (lhs/ft)	0.9 m (3.ft)	1 2 m (4 ft)	15m (5ft)	1.8 m (6 ft)	2 1 m (7 ft)	2 4 m (8 ft)	2.7 m (9.ft)	3 0 m (10 ft)	3 3 m (11 ft)
3 metres	1.5 Kpa	42.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
(10 feet)	(30 psf)	(2885.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
. ,	,	. ,	no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"				
	2.5 Kpa	46.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
	(50 psf)	(3181.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
			no stirrups	no stirrups	no stirrups	no stirrups	10M @ 15"				
	3.5 Kpa	50.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
	(70 psf)	(3478.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
			no stirrups	no stirrups	no stirrups	10M @ 15"					
4.5 metres	1.5 Kpa	50.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
(15 teet)	(30 pst)	(3461.7)	1-20W DOT.	1-20W DOT.	1-20W DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.
	2.5.Kpg	56.6	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top
	(50 nsf)	(3881.2)	1-20M top	1-20M hot	1-20M hot	1-20M hot	1-20M top	1-20M hot	1-20M top	1-20M bot	1-20M top
	(50 p31)	(0001.2)	no stirruns	no stirruns	no stirruns	10M @ 15"					
	3.5 Kpa	62.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
	(70 psf)	(4300.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
	,	· · /	no stirrups	no stirrups	10M @ 15"	2-10M @ 15"					
6.0 metres	1.5 Kpa	60.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
(20 feet)	(30 psf)	(4139.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			no stirrups	no stirrups	no stirrups	10M @ 15"	2-10M @ 15"				
	2.5 Kpa	68.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
	(50 psf)	(4681.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
		70.0	no stirrups	no stirrups	10M @ 15"	2-10M @ 15"					
	3.5 Kpa	/6.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top
	(70 pst)	(5224.7)	1-20W DOT.	1-20W DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	1-2010 DOT.	2-15IVI DOT.	2-15M DOT.
7.5 motros	1.5.Kpg	70.0	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	1 20M top	2-10WI@15	2-10WI@7.5
(25 feet)	(30 ncf)	(4800.0)	1-20M hot	1-2010 top	2-15W top 2-15M hot						
(20 1661)	(50 psi)	(4000.3)	no stirruns	no stirruns	10M @ 15"	2-10M @ 15"					
	2.5 Kpa	79.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top
	(50 psf)	(5458.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.
	,	· · /	no stirrups	no stirrups	10M @ 15"	2-10M @ 15"	10M @ 7.5"				
	3.5 Kpa	89.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top
	(70 psf)	(6116.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	10M @ 7.5"
9 metres	1.5 Kpa	83.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top
(30 feet)	(30 psf)	(5703.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.
	0.5.1/22	05.0	no stirrups	no stirrups	10M @ 15	2-10M @ 7.5	10M @ 7.5				
	2.0 Kµa (50 pcf)	90.2	1-20101 top	1-20W top	1-20W top	1-20W top	1-20W top	1-20W top	2-15W top 2.15M bot	1-20W top	2-2010 top 2.2010 bot
	(50 hsi)	(0520.4)	no stirrups	1-20W DOL 10M @ 15"	2-10M @ 7.5"	1-2JW DUL 10M @ 7.5"	2-20W DUL 2-10M @ 7.5"				
	3.5 Kna	107.2	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	1-25M top	2-20M ton
	(70 psf)	(7348.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.
	(- P-)	(,	no stirrups	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	10M @ 7.5"				
10.5 metres	1.5 Kpa	90.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-25M top
(35 feet)	(30 psf)	(6170.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.
			no stirrups	10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	2.5 Kpa	103.4	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top
	(50 psf)	(7083.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot,"	2-20M bot.
			no stirrups	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	10M @ 7.5"				
	3.5 Kpa	116.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	1-25M+1-15M top
	(/U pst)	(7996.7)	1-20M bot.	1-2010 bot.	1-2010 bot.	1-2010 bot.	1-2010 bot.	2-15M bot.	1-25M bot.	2-2010 bot.	1-25M+1-15M bot.
12 matrac	15 Kna	0.00	1.20M ton	1.20M ton	1.20M ton	1.20M ton	1.20M ton	2-10WI @ 7.5 1-20M ton	2-101VI @ 7.3 2-15M ton	2-10101 @ 7.0 1-25M ton	2-10₩ @ 7.5 2-20M ton
(40 faat)	(30 nef)	53.3 (6848.0)	1-20141 LUP	1-201/1 tup 1-201/1 hot	1-20101 top 1-20101 hot	1-20101 top 1-20101 hot	1-201/1 tup 1-201/1 tup	1-201/1 tup 1-201/1 hot	2-15/VLUP 2-15/M hot	1-25M hot	2-20141 LUP 2-20141 hot
(40 1001)	(on hei)	(0040.0)	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7 5"	2-10W @ 7.5"	10M @ 7 5"	2-2010 DOL 2-10M @ 7 5"
	2.5 Kna	115.0	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	1-25M ton	2-20M ton	1-25M+1-15M ton
	(50 psf)	(7884.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.
	(··· F=·)	(no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"
	3.5 Kpa	130.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(70 psf)	(8920.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	10M @ 7.5"	2-10M @ 7.5"	





Lintel Width = 6" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof										
Span	load	Uniform Load				Linte	l Span - Metres	(feet)						
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)			
3 metres (10 feet)	1.5 Kpa (30 nsf)	42.1 (2885.8)	1-2014 top 1-2014 hot	2-15M top 2-15M hot	2-15M top 2-15M hot	1-25M hot	1-25M top 1-25M hot	2-2014 top 2-2014 hot	1-25M+1-15M top 1-25M+1-15M hot					
(10100)	(00 p31)	(2000.0)	10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"					
	2.5 Kpa	46.4	1-20M top	2-15M top	2-15M top	1-25M top	2-20M top	1-25M+1-15M top	1-25M+1-15M top					
	(50 psf)	(3181.9)	1-20M bot.	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-15M bot.					
			10M @ 15"	2-10M @ 15"	2-10M @ 15"	10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa (70 ppf)	50.7	2-15M top	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top						
	(70 psi)	(3470.0)	2-10M @ 15"	2-10M @ 15"	10M @ 7.5"	1-25W DOL 10M @ 7.5"	2-20W DOL 2-10M @ 7.5"	2-10M @ 7.5"						
4.5 metres	1.5 Kpa	50.5	2-15M top	2-15M top	1-25M top	2-20M top	2-20M top	1-25M+1-15M top						
(15 feet)	(30 psf)	(3461.7)	2-15M bot.	2-15M bot.	1-25M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.						
			2-10M @ 15"	2-10M @ 15"	10M @ 7.5"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"						
	2.5 Kpa	56.6	2-15M top	1-25M top	1-25M top	2-20M top	1-25M+1-15M top							
	(ou psi)	(3881.2)	2-15WI DOL 2-10M @ 15"	1-25WI DOL 10M @ 7.5"	1-25WI DOL 10M @ 7.5"	2-20WI DOL 2-10M @ 7.5"	1-20WH1-10W DOL 2-10M @ 7.5"							
	3.5 Kpa	62.7	2-15M top	1-25M top	2-20M top	1-30M top	2 1011 6 7.5							
	(70 psf)	(4300.6)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.								
			2-10M @ 15"	10M @ 7.5"	2-10M @ 7.5"	10M @ 7.5"								
6.0 metres	1.5 Kpa	60.4	2-15M top	1-25M top	2-20M top	1-30M top								
(20 feet)	(30 pst)	(4139.0)	2-15M bot.	1-25M bot.	2-20M bot.	1-30M bot.								
	2 5 Kna	68.3	2-10// @ 15 1-25M ton	2-20M ton	2-10W @ 7.5 1-25M+1-15M ton	10W @ 7.5								
	(50 psf)	(4681.8)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.									
	,	· · /	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"									
	3.5 Kpa	76.2	1-25M top	2-20M top	1-25M+1-15M top									
	(70 psf)	(5224.7)	1-25M bot.	2-20M bot.	1-25M+1-15M bot.									
7.5 matras	1.5 Kna	70.0	10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5									
(25 feet)	(30 psf)	(4800.9)	1-25M bot.	2-2011 top 2-2011 top	1-25M+1-15M bot.									
()	(** (**))	()	10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"									
	2.5 Kpa	79.6	2-20M top	1-25M+1-15M top										
	(50 psf)	(5458.9)	2-20M bot.	1-25M+1-15M bot.										
	3.5 Kna	80.2	2-10M @ 7.5	2-10M @ 7.5										
	(70 nsf)	(6116.9)	2-2011 top 2-2011 top	1-25M+1-15M top										
	((******)	2-10M @ 7.5"	2-10M @ 7.5"										
9 metres	1.5 Kpa	83.2	2-20M top	1-25M+1-15M top										
(30 feet)	(30 psf)	(5703.9)	2-20M bot.	1-25M+1-15M bot.										
	2.5 Kna	05.2	2-10M @ 7.5	2-10M @ 7.5										
	(50 psf)	(6526.4)	1-25M+1-15M top											
	(** (**))	(******)	2-10M @ 7.5"											
	3.5 Kpa	107.2												
	(70 psf)	(7348.9)												
10.5 metrec	1.5 Kna	00.0	2-20M top											
(35 feet)	(30 psf)	(6170.8)	2-2011 top 2-2011 top											
(,	(···· /	()	2-10M @ 7.5"											
	2.5 Kpa	103.4	1-25M+1-15M top											
	(50 psf)	(7083.7)	1-25M+1-15M bot.											
	3.5 Kna	116.7	2-10M @ 7.5											
	(70 psf)	(7996.7)												
	(· r ·)	()												
12 metres	1.5 Kpa	99.9	1-25M+1-15M top											
(40 feet)	(30 psf)	(6848.0)	1-25M+1-15M bot.											
	2.5 Kna	115.0	2-10M @ 7.5											
	(50 psf)	(7884.3)												
	(** (**))	()												
	3.5 Kpa	130.2												
	(70 psf)	(8920.7)												
_ 🛛 ด	ÎÊ					Lintel Width = 6'	(203 mm)		Legend					
	3m		E E			Lintel Depth = 24	1″ (610 mm)		1-20M top = top	rebar				
010	222	10	25			Ellective Depth =	:∠1.8 (553 MM) 20 Mna		1-201VI DOT.= bot 2-10M @ 7.5" -	use two 10M etir	rune @ 7.5" 0/0			
9)		9				i u w zo uays = Fv = 400 Mpa (6	20 ivipa O kei)		2-101VI @ 1.0 =	use two TOIVI SUI	1.0 U/U			



24 ~

6″ (152mm)

Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Floor Clear	Ground snow	Total Factored			Minimum I Carry	Reinforceme	nt for Lintels Storey ICF +	in Load Bea Light Frame	ring Walls Roof		
Span	load	Uniform Load			Jan	Linte	Span - Metres	(feet)	1001		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	46.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	. ,		. ,	. , ,
(10 feet)	(30 psf)	(3183.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.				
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"				
	2.5 Kpa	50.8	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
	(50 psf)	(3479.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
	0.5.1/	55 4	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"				
	3.5 Kpa	55.1	1-15M top	1-15M top	1-15M top	1-20M top					
	(70 pst)	(3775.4)	1-10W DOL 10M @ 5.5"	1-15IVI DOL.	1-15WI DOL.	1-20101 DOL.					
4.5 metres	1.5 Kna	54.8	1-15M ton	1-15M ton	1-15M ton	1-20M ton					
(15 feet)	(30 nsf)	(3759 1)	1-15M hot	1-15M bot	1-15M hot	1-20M hot					
()	(** ***)	(0.00.)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	2.5 Kpa	61.0	1-15M top	1-15M top	1-15M top	1-20M top					
	(50 psf)	(4178.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	3.5 Kpa	67.1	1-15M top	1-15M top	1-20M top						
	(70 psf)	(4598.1)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
6.0 metres	1.5 Kpa	64.7	1-15M top	1-15M top	1-15M top						
(20 teet)	(30 pst)	(4430.4)	1-10W DOL 10M @ 5.5"	1-15IVI DOL.	1-15WI DOL.						
	2 5 Kna	72.6	1-15M ton	1-15M ton	1-20M ton						
	(50 nsf)	(4979.2)	1-15M hot	1-15M bot	1-20M hot						
	(00 poi)	(101012)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	80.6	1-15M top	1-15M top							
	(70 psf)	(5522.1)	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"							
7.5 metres	1.5 Kpa	74.4	1-15M top	1-15M top	1-15M+1-10M top						
(25 feet)	(30 psf)	(5098.3)	1-15M bot.	1-15M bot.	1-15M+1-10M bot.						
	0.5.1/	01.0	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"						
	2.5 Kpa	84.U	1-15M top	1-15M top							
	(ou hei)	(3730.3)	1-10W DUL 10M @ 5.5"	1-15W DUL.							
	3.5 Kna	93.6	1-15M ton	1-15M top							
	(70 psf)	(6414.3)	1-15M bot.	1-15M bot.							
	(- P-)	(* /	10M @ 5.5"	10M @ 5.5"							
9 metres	1.5 Kpa	87.6	1-15M top	1-15M top							
(30 feet)	(30 psf)	(6001.4)	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"							
	2.5 Kpa	99.6	1-15M top	2-10M top							
	(50 pst)	(6823.8)	1-15M bot.	2-10M bot.							
	3.5 Kna	111.6	1.15M top	2-10WI@ 5.5							
	0.0 r.µa (70 nef)	(7646.3)	1-15M hot								
	(10 poi)	(1010.0)	10M @ 5.5"								
10.5 metres	1.5 Kpa	94.4	1-15M top	1-15M top							
(35 feet)	(30 psf)	(6468.2)	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"							
	2.5 Kpa	107.7	1-15M top								
	(50 psf)	(7381.2)	1-15M bot.								
	0.5.1/	101.0	10M @ 5.5"								
	3.5 Kpa (70 pof)	121.U (820/L1)	1-15M bot								
	(70 psi)	(0234.1)	10M @ 5.5"								
12 metres	1.5 Kna	104.3	1-15M ton								
(40 feet)	(30 psf)	(7145.5)	1-15M bot.								
· · · · /	х г· /	x · · ·/	10M @ 5.5"								
	2.5 Kpa	119.4	1-15M top								
	(50 psf)	(8181.8)	1-15M bot.								
			10M @ 5.5"								
	3.5 Kpa	134.5	1-15M top								
	(70 pst)	(9218.1)	1-15M bot.								
			10M @ 5.5								



(203mm)

Lintel Width = 8" (203 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 10M @ 5.5" = use one 10M stirrup @ 5.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum	Reinforceme	nt for Lintels	s in Load Bea	aring Walls		
Snan	load	Iniform I oad			Carry	l intel	Snan - Metres	(feet)	ROOI		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	46.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-20M+1-15M top		
(10 feet)	(30 psf)	(3204.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.		
, , ,			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	2-10M @ 6.5"		
	2.5 Kpa	51.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
	(50 psf)	(3500.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.			
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"			
	3.5 Kpa	55.4	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
	(70 psf)	(3796.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.			
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"			
4.5 metres	1.5 Kpa	55.2	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
(15 teet)	(30 pst)	(3780.4)	1-15W DOT.	1-15M DOL	1-15M DOT.	1-15W DOT.	1-2010 DOT.	2-15IVI DOT.			
	2.5.Kpg	61.2	1 15M top	101VI @ 0.0	10W @ 0.0	1 20M top	1 20M top	2-10WI@0.5			
	2.0 Kµa (50 pcf)	(/100.9)	1-15W tup	1-TOWILOP	1-15W top	1-20101 top	1-20101 top				
	(50 hsi)	(4199.0)	10M @ 6.5"	1-TJIW DUL 10M @ 6.5"	1-15IW DUL 10M @ 6.5"	1-20W DOL 10M @ 6.5"	1-20W DOL 10M @ 6.5"				
	3.5 Kna	67.4	1-15M ton	1-15M top	1-15M top	1-20M top	10111 (8 0.5				
	(70 psf)	(4619.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
	(,	()	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"					
6.0 metres	1.5 Kpa	65.0	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
(20 feet)	(30 psf)	(4457.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
· · ·	,	· · /	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"				
	2.5 Kpa	73.0	1-15M top	1-15M top	1-15M top	1-20M top					
	(50 psf)	(5000.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"					
	3.5 Kpa	80.9	1-15M top	1-15M top	1-15M top						
	(70 psf)	(5543.3)	1-15M bot.	1-15M bot.	1-15M bot.						
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
7.5 metres	1.5 Kpa	74.7	1-15M top	1-15M top	1-15M top	1-15M+1-10M top					
(25 feet)	(30 psf)	(5119.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M+1-10M bot.					
	0.5.1/22	04.0	10M @ 6.5	10M @ 6.5	10M @ 6.5	2-10M @ 6.5					
	2.5 Kpa	04.3 (E777 E)	1-15W top	1-15W top	1-15W top						
	(ou hei)	(3777.5)	1-10W DUL	1-15W DUL 10M @ 6.5"	1-15WI DUL.						
	3.5 Kna	03.0	1-15M ton	1-15M top	1-20M top						
	(70 nsf)	(6435.5)	1-15M hot	1-15M hot	1-20M hot						
	(10 poi)	(0.00.0)	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
9 metres	1.5 Kpa	87.9	1-15M top	1-15M top	1-20M top						
(30 feet)	(30 psf)	(6022.6)	1-15M bot.	1-15M bot.	1-20M bot.						
, , ,			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
	2.5 Kpa	99.9	1-15M top	1-15M top							
	(50 psf)	(6845.1)	1-15M bot.	1-15M bot.							
			10M @ 6.5"	10M @ 6.5"							
	3.5 Kpa	111.9	1-15M top	1-15M top							
	(70 psf)	(7667.5)	1-15M bot.	1-15M bot.							
10.5 meters	15 //	047	10M @ 6.5	10M @ 6.5"	1 10111 10111						
IU.5 Metres	1.5 Kpa	94./ (6400.4)	1 1 SM bot	1 15M bot	1 15M 1 10M E-4						
(55 leet)	(ou hei)	(0409.4)	10M @ 6.5"	10M @ 6 F"	2-10M @ 6 5"						
	2.5 Kna	108.0	1-15M ton	1-15M top	2-10WI@0.5						
	(50 nsf)	(7402.4)	1-15M hot	1-15M hot							
	(00 poi)	(7102.1)	10M @ 6.5"	10M @ 6.5"							
	3.5 Kpa	121.3	1-15M top	1-15M top							
	(70 psf)	(8315.3)	1-15M bot.	1-15M bot.							
	х г· /	x · · · /	10M @ 6.5"	10M @ 6.5"							
12 metres	1.5 Kpa	104.6	1-15M top	1-15M top							
(40 feet)	(30 psf)	(7166.7)	1-15M bot.	1-15M bot.							
			10M @ 6.5"	10M @ 6.5"							
	2.5 Kpa	119.7	1-15M top	1-15M top							
	(50 psf)	(8203.0)	1-15M bot.	1-15M bot.							
			10M @ 6.5"	10M @ 6.5"							
	3.5 Kpa	134.8	1-15M top	1-15M+1-10M top							
	(70 psf)	(9239.3)	1-15M bot.	1-15M+1-10M bot.							
			10M @ 6.5"	2-10M @ 6.5"							





Lintel Width = 8" (203 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 10M @ 6.5" = use one 10M stirrup @ 6.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls Roof		
Span	load	Uniform Load			Garr	Linte	Span - Metres	(feet)	NUUI		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	47.4	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top
(10 feet)	(30 psf)	(3246.9)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	2.5 Kpa	51.7	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top
	(50 psf)	(3543.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
	0.5.1/	50.0	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	3.5 Kpa	0.00	1-15W top	1-15W top	1-15W top	1-15W top	1-15M top	1-20IVI top	2-15W top	2-15W top	1-20101+1-15101 top
	(70 psi)	(3039.1)	1-15WI DUL.	1-15WI DUL 10M @ 0.5"	1-15W DUL.	1-15W DOL. 10M @ 0.5"	1-15W DUL 10M @ 0.5"	1-20101 DOL.	2-10W @ 0.5"	2-15W DUL 2-10M @ 0.5"	1-20W+1-15W D0L 2-10M @ 0.5"
4.5 metres	1.5 Kna	55.8	1-15M top	1-15M top	1-15M top	1-15M ton	1-15M ton	1-20M ton	2-15M ton	2-10W @ 9.5	1-20M+1-15M top
(15 feet)	(30 psf)	(3822.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
(• • • •)	(******	()	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	2.5 Kpa	61.9	1-15M top	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top		
	(50 psf)	(4242.3)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.		
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
	3.5 Kpa	68.0	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
	(70 psf)	(4661.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	1-20M bot.	2-15M bot.		
	4.5.10	05.7	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"		
6.0 metres	1.5 Kpa	65.7	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top		
(20 feet)	(30 pst)	(4000.1)	I-IOW DOL	1-15WI DOL 10M @ 0.5"	1-15W DOL 10M @ 0.5"	1-15WI DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL 2 10M @ 0.5"		
	2.5 Kna	73.6	1-15M top	1-15M top	1-15M ton	1-15M ton	1_20M top	2-15M top	2-10WI@ 9.5		
	(50 nsf)	(5042.9)	1-15M hot	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot			
	(00 poi)	(0012.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
	3.5 Kpa	81.5	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
	(70 psf)	(5585.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
7.5 metres	1.5 Kpa	75.3	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top			
(25 feet)	(30 psf)	(5162.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
	2.5 Kpa	84.9	1-15M top	1-15M top	1-15M top	1-15M top					
	(50 pst)	(5820.0)	1-15M DOL	1-15M DOL	1-15M DOT.	1-15M DOT.					
	3.5 Kna	04.5	1.15M top	1.15M top	1010 @ 9.5	1010/ @ 9.5					
	(70 nsf)	(6478.0)	1-15M hot	1-15M hot	1-15M hot	1-20M hot					
	(10 poi)	(011010)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
9 metres	1.5 Kpa	88.5	1-15M top	1-15M top	1-15M top	1-20M top					
(30 feet)	(30 psf)	(6065.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	100.5	1-15M top	1-15M top	1-15M top	1-20M top					
	(50 psf)	(6887.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	3.5 Kpa	112.5	1-15M top	1-15M top	1-15M top	1-20M top					
	(70 pst)	(7710.0)	1-15WI DOL 10M @ 0.5"	1-15WI DOL 10M @ 0.5"	1-15W DOL 10M @ 0.5"	1-20101 DOL.					
10.5 metres	1.5 Kna	05.3	1-15M top	1-15M top	1-15M ton	1.20M ton					
(35 feet)	(30 nsf)	(6531.9)	1-15M hot	1-15M hot	1-15M bot	1-20M top					
(00 1001)	(00 poi)	(000110)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	2.5 Kpa	108.6	1-15M top	1-15M top	1-15M top	1-20M top					
	(50 psf)	(7444.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"					
	3.5 Kpa	121.9	1-15M top	1-15M top	1-15M top						
	(70 psf)	(8357.8)	1-15M bot.	1-15M bot.	1-15M bot.						
10	4.5.1	105.0	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
12 metres	1.5 Kpa	105.2	1-15M top	1-15M top	1-15M top	1-15M+1-10M top					
(4U feet)	(30 pst)	(7209.1)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M+1-1UM bot.					
	2.5 Kno	120.2	1UWI @ 9.5	1UIVI @ 9.5	10W @ 9.5	2-10WI@9.5					
	(50 nef)	(8245 5)	1-15M hot	1-15M hot	1-15M hot						
	(00 hoi)	(02 10.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						
	3.5 Kpa	135.4	1-15M top	1-15M top	1-20M top						
	(70 psf)	(9281.8)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"						





(203mm)

8″

Lintel Width = 8" (203 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum Carry	Reinforceme /ing Second	nt for Lintels Storey ICF +	s in Load Bea Light Frame	aring Walls Roof		
opan metrec (feet)	UBUI	VIIIIUIIII LOAD	3.6 m (19.#\	3 0 m (12 #)	1 2 m (11 #)	LINTE	1 8 m (16 #)	(ICEL)	5 /1 m (10 #)	5.7 m (10.#)	6 0 m (20 #\
a metres	1.5 Kpg		2-20M top	3.9 III (13 II)	4.2 111 (14 11)	4.5 111 (15 11)	4.0 III (10 II)	5.1 III (17 II)	5.4 III (10 II)	5.7 III (19 II)	0.0 111 (20 11)
(10 feet)	(30 nef)	(3246.0)	2-2011 top 2-2014 hot	1-25M+1-20M top							
(101000)	(00 p31)	(0240.3)	2-10M @ 9.5"	2-10M @ 9.5"							
	2 5 Kna	51.7	2-20M ton	2 10101 @ 0.0							
	(50 nef)	(3543.0)	2-20M top								
	(50 p31)	(0040.0)	2-10M @ 9.5"								
	3.5 Kpa	56.0	2 1011 0 010								
	(70 psf)	(3839.1)									
	(- P-)	(,									
4.5 metres	1.5 Kpa	55.8									
(15 feet)	(30 psf)	(3822.8)									
		. ,									
	2.5 Kpa	61.9									
	(50 psf)	(4242.3)									
	3.5 Kpa	68.0									
	(70 psf)	(4661.8)									
6.0 metres	1.5 Kpa	65.7									
(20 feet)	(30 psf)	(4500.1)									
	2.5 Kpa	73.6									
	(50 psf)	(5042.9)									
	3.5 Kpa	81.5									
	(70 pst)	(5585.8)									
7 E matros	1 E Vpa	75.0									
(OF feet)	1.0 Kµa (20 nof)	(5100.0)									
(20 leet)	(au hai)	(0102.0)									
	2.5 Kna	84.9									
	(50 nef)	(5820.0)									
	(50 p31)	(3020.0)									
	3.5 Kpa	94.5									
	(70 psf)	(6478.0)									
	(- P-)	(****)									
9 metres	1.5 Kpa	88.5									
(30 feet)	(30 psf)	(6065.0)									
	,	. ,									
	2.5 Kpa	100.5									
	(50 psf)	(6887.5)									
	3.5 Kpa	112.5									
	(70 psf)	(7710.0)									
10.5 metres	1.5 Kpa	95.3									
(35 feet)	(30 psf)	(6531.9)									
	2.5 Kpa	108.6									
	(50 psf)	(7444.8)									
	0.5.1/	404.0									
	3.5 Kpa	121.9									
	(70 pst)	(8.100)									
10 motros	15 100	105.0									
(40 feet)	(30 pof)	(7200 1)									
(40 1861)	(ou hei)	(1209.1)									
	2.5 Kna	120.3									
	(50 nef)	(8245 5)									
	(on hoi)	(02-10.0)									
	3,5 Kna	135.4									
	(70 psf)	(9281.8)									
	х г· /	x · · ·/									
-											





Lintel Width = 8" (203 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-15M top = top rebar 1-15M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum Carry	Reinforceme	nt for Lintels Storey ICF +	s in Load Bea Light Frame	aring Walls Roof		
Span	load	Uniform Load			ourry	Linte	l Span - Metres	(feet)	11001		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	48.0	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top				
(10 feet)	(30 psf)	(3289.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.				
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"
	2.5 Kpa	52.3	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top				
	(50 psr)	(3080.0)	1-20W DOL	1-20W DOL	1-20101 DOL.	1-20W DOL 10M @ 12"	1-20101 DOL.	1-20101 DOL.	1-20WI DOL 10M @ 12"	1-20101 DOL 1010 @ 12"	2-10M @ 12"
	3.5 Kna	56.6	1-20M ton	1-20M top	1-20M ton	1-20M ton	1-20M top	1-20M top	1-20M ton	1-20M ton	2-10M @ 12
	(70 psf)	(3881.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.				
	(- P-)	(no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"
4.5 metres	1.5 Kpa	56.4	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top				
(15 feet)	(30 psf)	(3865.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.				
			no stirrups	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"
	2.5 Kpa	62.5	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top				
	(50 pst)	(4284.7)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.				
	3.5 Kna	68.6	1-20M top	1-20M top	1-20M ton	1-20M top	1-20M top	1-20M top	1-20M ton	2-10W @ 12 2-15M top	2-10W @ 12 1-20M±1-15M top
	(70 nsf)	(4704.2)	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M bot	1-20M hot	1-20M hot	2-15M hot	1-20M+1-15M hot
	(10 poi)	()	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"
6.0 metres	1.5 Kpa	66.3	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top				
(20 feet)	(30 psf)	(4542.5)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.				
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"
	2.5 Kpa	74.2	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top				
	(50 psf)	(5085.4)	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.				
	0 E 1/no	00.1	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	3.5 Kpa (70 pcf)	62.1 (5609.0)	1-2010 top	1-20M top	1-20IVI top	1-20M top	1-20M bot	1-20M bot	2-15M top	1-20M+1-15M top	2-2014 top 2.2014 bot "
	(70 þsi)	(3020.2)	no stirruns	10M @ 12"	10M @ 12"	10M @ 12"	1-20W DOL 10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-20W DOL, 2-10M @ 6"
7.5 metres	1.5 Kpa	75.9	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-20M+1-15M top				
(25 feet)	(30 psf)	(5204.5)	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-20M+1-15M bot.				
. ,	,	, , ,	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	2.5 Kpa	85.5	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top				
	(50 psf)	(5862.4)	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.				
	0.5.1/	05.4	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"
	3.5 Kpa	95.1	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top				
	(70 psi)	(0520.4)	no stirruns	1-20W DOL 10M @ 12"	1-20W DOL 10M @ 12"	1-20W DOL 10M @ 12"	1-2010 DOL. 10M @ 12"	2-15W DUL 2-10M @ 12"	2-10M @ 12"	2-20W DUL 2-10M @ 6"	2-10M @ 6"
9 metres	1.5 Kpa	89.1	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top				
(30 feet)	(30 psf)	(6107.5)	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.				
. ,		, , ,	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"
	2.5 Kpa	101.1	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top				
	(50 psf)	(6930.0)	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.				
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6.25"	2-10M @ 6"
	3.5 Kpa	113.1	1-20M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top				
	(70 psi)	(7752.4)	1-20101 DOL 10M @ 12"	1-20101 DOL.	1-20W DOL 10M @ 12"	1-20101 DOL.	1-20101 DOL. 10M @ 12"	2-15W DUL 2-10M @ 12"	1-20W+1-15W DUL 2_10M @ 6"	1-25WI+1-15WI DUL 2-10M @ 6"	1-25WI+1-20WI DUL 2-10M @ 6"
10.5 metres	1.5 Kna	95.9	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M top	2-10M @ 12	1-20M+1-15M ton	2-20M ton	1-25M+1-15M top
(35 feet)	(30 psf)	(6574.3)	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.				
. ,	,	, , ,	no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"
	2.5 Kpa	109.2	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-20M top				
	(50 psf)	(7487.3)	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-20M bot.				
			no stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"
	3.5 Kpa	122.6	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	2-25M top
	(70 pst)	(ö4UU.2)	1-201VI DOT. 10M @ 10"	1-201VI DOT. 10M @ 10"	1-201VI DOT. 10M @ 10"	1-201VI DOT. 10M @ 10″	2-10M DOL 2-10M @ 10"	1-20101+1-15101 DOL. 2-1014 @ 6"	2-2011 DOT. 2-1014 @ 6"	1-20101+1-15101 DOT. 2-1010 @ 6"	2-2011 DOT. 2-1014 @ 6"
12 metres	1.5 Kna	105.8	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-101VI @ 12 1-20M ton	2-10///@0 2-15M ton	2-101/1 @ 0 1-20M+1-15M ton	2-101/1@0 2-20M ton	2-101/1 @ 0 1-25M+1-20M ton
(40 feet)	(30 psf)	(7251.6)	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-20M bot.				
((por)	(10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
	2.5 Kpa	120.9	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	2-25M top
	(50 psf)	(8287.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.
			10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"
	3.5 Kpa	136.0	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top
	(70 psf)	(9324.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.
			10W @ 12	1UW @ 12	1UM @ 12	1UW @ 12	2-10M @ 12	2-10M @ 6	2-10M @ 6	2-10M @ 6	2-10M @ 6



(452mm

°.

2.



Lintel Width = 8"(203 mm) Lintel Depth = 20" (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20 top = top rebar 1-20 bot.= bottom rebar 2-10M @ 6⁻⁻⁻ = use two 10M stirrups @ 6⁻⁻⁻ 0/C⁻⁻⁻

20~

8″ (203mm)

17.8″

20

8″ (203mm)

Floor Clear	Ground snow	Total Factored			Minimum Carry	Reinforceme /ing Second	nt for Lintels Storey ICF +	in Load Bea Light Frame	aring Walls Roof		
Span	load	Uniform Load				Linte	l Span - Metres	(feet)			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)
3 metres (10 feet)	1.0 Kpa (30 nef)	48.0	2-15W top 2-15M bot	1-20M+1-15M top	2-2014 top 2-2014 hot	1-25M+1-15M top	1-25M+1-20M top	2-25M hot	2-25M top 2-25M bot	1-30M+1-25M top	2-30M top 2-30M bot
(TO REEL)	(au hai)	(3209.4)	2-10M @ 12"	2-10M @ 12"	2-20W DOL 2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-20W DOL 2-10M @ 6"	2-25W DOL 2-10M @ 6"	2-10M @ 6"	2-30W DUL 2-10M @ 6"
	2.5 Kpa	52.3	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top
	(50 psf)	(3585.5)	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.
	/	. ,	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"
	3.5 Kpa	56.6	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
	(70 psf)	(3881.6)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	
			2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	
4.5 metres	1.5 Kpa	56.4	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
(15 teet)	(30 pst)	(3865.3)	1-20M+1-15M DOL	2-20W DOT.	1-25M+1-15M DOL	1-25M+1-20M DOT.	2-25W DOT.	2-25W DOT.	1-30W+1-25W DOT.	2-30W DOT.	
	2 5 Kna	62.5	1-20M+1-15M ton	2-101/1@12	2-10M @ 12	2-10W @ 0	2-10W @ 0	2-10W @ 0 1-30M+1-25M ton	2-10M @ 0	2-10101@0	
	(50 nsf)	(4284.7)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.		
	(()	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"		
	3.5 Kpa	68.6	2-20M top	1-25M+1-15M top	1-25M+1-15M top	2-25M top	1-30M+1-25M top	2-30M top			
	(70 psf)	(4704.2)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-15M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
			2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"			
6.0 metres	1.5 Kpa	66.3	2-20M top	1-25M+1-15M top	1-25M+1-15M top	2-25M top	1-30M+1-25M top	2-30M top			
(20 feet)	(30 psf)	(4542.5)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-15M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
	0.E. Kno	74.0	2-10M @ 12	2-10M @ 6	2-10M @ 6	2-10M @ 6	2-10M @ 6	2-10M @ 6			
	2.0 Kµa (50 nef)	(5085.4)	2-2014 top 2-2014 bot	1-25M+1-20M top	2-25M hot	2-25M hot	2-30W top 2-30M bot				
	(50 psi)	(5005.4)	2-20W DOL 2-10M @ 12"	2-10M @ 6"	2-25W DOL 2-10M @ 6"	2-25W DOL 2-10M @ 6"	2-30W DOL 2-10M @ 6"				
	3.5 Kpa	82.1	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
	(70 psf)	(5628.2)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
7.5 metres	1.5 Kpa	75.9	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
(25 feet)	(30 psf)	(5204.5)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 6"	2-10M @ 6"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"				
	2.5 Kpa	85.5	1-25M+1-15M top	2-25M top	1-30M+1-25M top	2-30M top					
	(ou psr)	(5862.4)	1-25IVI+1-15IVI DOL.	2-23WI DOL 2 10M @ 6"	1-30IVI+1-25IVI DOL.	2-30W DOL 2 10M @ 6"					
	3 5 Kna	95.1	1-25M+1-20M ton	2-25M ton	1-30M+1-25M ton	2-10W @ 0					
	(70 nsf)	(6520.4)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.						
	((******)	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
9 metres	1.5 Kpa	89.1	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
(30 feet)	(30 psf)	(6107.5)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"					
	2.5 Kpa	101.1	2-25M top	1-30M+1-25M top	2-30M top						
	(50 pst)	(6930.0)	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
	3.5.Kna	112.1	2-10M @ 6	2-10M @ b 1-30M 1-25M top	2-10M @ b						
	(70 nsf)	(7752.4)	2-25M top	1-30M+1-25M top							
	(10 poi)	(1102.1)	2-10M @ 6"	2-10M @ 6"							
10.5 metres	1.5 Kpa	95.9	1-25M+1-20M top	2-25M top	1-30M+1-25M top						
(35 feet)	(30 psf)	(6574.3)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M top						
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	2.5 Kpa	109.2	2-25M top	1-30M+1-25M top							
	(50 psf)	(7487.3)	2-25M bot.	1-30M+1-25M bot.							
	3.5 Kna	122.6	2-10W @ 0	2-101VI@0 2-30M top							
	(70 nsf)	(8400.2)	1-30M+1-25M top	2-30M top							
	(10 poi)	(0100.2)	2-10M @ 6"	2-10M @ 6"							
12 metres	1.5 Kpa	105.8	2-25M top	1-30M+1-25M top							
(40 feet)	(30 psf)	(7251.6)	2-25M bot.	1-30M+1-25M bot.							
			2-10M @ 6"	2-10M @ 6"							
	2.5 Kpa	120.9	1-30M+1-25M top	2-30M top							
	(50 psf)	(8287.9)	1-30M+1-25M bot.	2-30M bot.							
	0 5 1/	100.0	2-10M @ 6"	2-10M @ 6"							
	3.5 Kpa	136.0	2-30M top								
	(70 þsi)	(3324.2)	2-301WI DUL. 2-10M @ 6"								
	52mm)	3mm)	r 1	52mm)		Lintel Width = 8 Lintel Depth = 2 Effective Depth -	"(203 mm) 0" (508 mm) - 17 8" (452 mm)	Legend 1-20 top = top re	ebar m rehar	
(20(" (4t	(208	8	<u>" (4</u>		F'c @ 28 days = Fy = 400 Mpa (6	20 Mpa 60 ksi)	,	2-10M @ 6" = us	se two 10M stirr	ups @ 6″ O/C″

 * check applicability limits table A1.2 in appendix A to use this chart

ò

	Cround anour	Total Fastarad			Minimum	Reinforceme	nt for Lintels	in Load Be	aring Walls		
Snan	load	Iniform Load			Carry	linte Jinte	Storey ICF +	(foot)	ROOT		
metres (feet)	Kna (nsf)	KN/m (lhs/ft)	0.9 m (3.ft)	1 2 m (4 ft)	15m (5ft)	1.8 m (6 ft)	2 1 m (7 ft)	2 4 m (8 ft)	2.7 m (9.ff)	3 0 m (10 ft)	3 3 m (11 ft)
3 metres	1.5 Kpa	48.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
(10 feet)	(30 psf)	(3331.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
		, , ,	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	52.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
	(50 psf)	(3627.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
			no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	3.5 Kpa	57.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top
	(70 psf)	(3924.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.
4.E matros	1 E Vpa	E7.0	no stirrups	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15
4.0 IIIelies	1.0 Kµa (30 ncf)	57.0 (3007.7)	1-20101 t0p	1-20101 t0p	1-20101 t0p	1-20101 t0p	1-20101 top 1-20101 bot	1-20101 top	1-20101 t0p	1-20101 t0p	1-20101 top 1-20101 bot
(15 1661)	(50 psi)	(3307.7)	no stirruns	no stirruns	no stirruns	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"
	2.5 Kpa	63.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
	(50 psf)	(4327.2)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
	,	· · /	no stirrups	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"
	3.5 Kpa	69.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
	(70 psf)	(4746.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"
6.0 metres	1.5 Kpa	66.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
(20 feet)	(30 psf)	(4585.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
	0 E Kno	74.0	no stirrups	no stirrups	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	10M @ 15	2-10M @ 15
	2.0 Kµa (50 pcf)	(5107.0)	1-20W top	1-20W top	1-20W top	1-20W lop	1-20101 top	1-20W top	1-201VI top	2-15W top 2.15M bot	2-15W top 2.15M bot
	(50 hsi)	(3127.0)	no stirruns	no stirruns	1-20101 DOL 10M @ 15"	10M @ 15"	1-20W DOL 10M @ 15"	1-20W DOL 10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"
	3.5 Kna	82 7	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M top	1-20M ton	2-15M ton	1-20M+1-15M top
	(70 psf)	(5670.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.
	(,	(00000)	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"
7.5 metres	1.5 Kpa	76.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top
(25 feet)	(30 psf)	(5246.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.
			no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"
	2.5 Kpa	86.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top
	(50 psf)	(5904.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.
	0.5.1/22	05.0	no stirrups	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"
	3.5 Kpa (70 pcf)	90.0	1-2010 top	1-20M top	1-20M bot	1-20M top	1-20M hot	1-2010 top	2-15W top	1-20M+1-15M top	1-20M+1-15M top
	(70 psi)	(0502.9)	no stirrups	1-20W DOL 10M @ 15"	1-20W DOL 10M @ 15"	1-20W DOL 10M @ 15"	1-20W DUL 10M @ 15"	1-20W DUL 10M @ 15"	2-10M @ 15"	2-10M @ 15"	2_10M @ 15"
9 metres	1.5 Kpa	89.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top
(30 feet)	(30 psf)	(6149.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
· · /	,	· · /	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"
	2.5 Kpa	101.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(50 psf)	(6972.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"
	3.5 Kpa	113.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top
	(70 pst)	(7794.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.
10.5 metrec	1.5 Kna	06.5	1-20M top	1-20M top	1_20M top	1-20M top	1-20M top	2-10W @ 15	2-10WI@15	2-10W @ 7.5	2-10WI@7.5
(35 feet)	(30 nsf)	(6616.8)	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M hot	2-15M hot	1-20M+1-15M hot	2-20M hot
(00 1001)	(00 poi)	(0010.0)	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"
	2.5 Kpa	109.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(50 psf)	(7529.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"
	3.5 Kpa	123.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top
	(70 psf)	(8442.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.
10	4.5.4	100.1	no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"
12 INETIES	1.5 Kpa	100.4 (700.4 m)	1-20M top	1-20M top	1-20M top	1-20M top	1-20M bot	2-10M TOP	2-10M TOP	1-20M+1-15M top	2-2014 top
(40 1001)	(au psi)	(7294.0)	1-201VI DOL.	1-201VI DOL. 10M @ 15"	1-2010 DOL 10M @ 15"	1-∠UIVI DOL. 10M @ 15″	1-2010 DOL 10M @ 15"	2-10W DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	1-20101+1-10101 DOL 2-1010 @ 15"	2-20₩ DOL 2-10M @ 7.5"
	2.5 Kna	121.5	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-10W @ 10	1-20M+1-15M ton	2-101/1 @ 10 2-20M ton	1-25M+1-15M ton
	(50 nsf)	(8330.4)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M hot.	1-20M+1-15M bot	2-20M bot.	1-25M+1-15M bot
	(··· F=·)	(no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"
	3.5 Kpa	136.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-20M top
	(70 psf)	(9366.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-20M bot.
			no stirrups	10M @ 15"	10M @ 15"	10M @ 15"	10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"





Lintel Width = 8" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C

	Cround onour	Total Eastarad			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Floor Clear Snan	Ground Show	Iniform Load			Carry	linte Secona	Storey ICF +	Light Frame	ROOT		
metres (feet)	Kna (nsf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)
3 metres	1.5 Kpa	48.6	2-15M top	2-15M top	1-20M+1-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top
(10 feet)	(30 psf)	(3331.8)	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"
	2.5 Kpa	52.9	2-15M top	2-15M top	1-20M+1-15M top	2-20M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top
	(50 psf)	(3627.9)	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"
	3.5 Kpa	57.3	2-15M top	1-20M+1-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top
	(70 pst)	(3924.0)	2-15M DOL	1-20M+1-15M DOL	1-20M+1-15M DOL	2-20W DOT.	1-25M+1-15M DOL	1-25M+1-2UM DOL	2-25M DOL	2-25W DOT.	1-3UM+1-25M DOL
4.5 metres	1.5 Kna	57.0	2-10W @ 15 2-15M ton	2-10W @ 15	2-10W @ 15	2-10W @ 15	2-10W @ 15 1-25M±1-15M ton	2-10W @ 15 1-25M±1-20M ton	2-10WI@7.5 2-25M ton	2-10W @ 7.5	2-10W @ 7.5 1-30M±1-25M ton
(15 feet)	(30 psf)	(3907.7)	2-15M bot.	1-20M+1-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.
(• • • •)	((,	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"
	2.5 Kpa	63.1	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top
	(50 psf)	(4327.2)	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"
	3.5 Kpa	69.3	1-20M+1-15M top	2-20M top	2-20M top	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	2-30M top
	(70 pst)	(4746.7)	1-20M+1-15M bot.	2-20M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	2-30M bot.
6.0 motros	1.5 // no	66.0	2-10M @ 15	2-10M @ 15	2-10M @ 15	2-10M @ 7.5	2-10M @ 7.5	2-10W @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10W @ 7.5
(20 feet)	(30 nsf)	(4585.0)	1-20M+1-15M top	1-20M+1-15M top	2-2010 top 2-2010 hot	1-25M+1-15M top	1-25M+1-20M hot	2-25M hot	1-30M+1-25M hot	1-30M+1-25M hot	2-30M top 2-30M hot
(201001)	(00 p3i)	(4000.0)	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"
	2.5 Kpa	74.8	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top	E TOIL O TIO
	(50 psf)	(5127.8)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.	
			2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	
	3.5 Kpa	82.7	2-20M top	1-25M+1-15M top	1-25M+1-20M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top		
	(70 psf)	(5670.7)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.		
7.5	1 C V	70.0	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	0.0014.444	
(25 foot)	1.5 Kpa (20 pcf)	(5246.0)	1-20M+1-15M top	2-2010 top	1-25M+1-15M top	1-25M+1-20M top	2-25W top	1-30IVI+1-25IVI [0p	2-30W top	2-30W top	
(25 1661)	(au hai)	(3240.9)	2-10M @ 15"	2-20W DUL 2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7 5"	2-25W DOL 2-10M @ 7.5"	2-10M @ 7 5"	2-30W DUL 2-10M @ 7.5"	2-30W DOL 2-10M @ 7.5"	
	2.5 Kpa	86.2	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	E TONI O TIO	2 1011 0 110	
	(50 psf)	(5904.9)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
			2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"			
	3.5 Kpa	95.8	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
	(70 psf)	(6562.9)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
0 matras	1 5 Km	90.7	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5			
(30 feet)	(30 nsf)	(61/19.9)	2-2010 top 2-2010 hot	1-25M+1-15M top	1-25M+1-20M hot	2-25M top	1-30M+1-25M hot	2-30M top			
(00 1001)	(00 p3i)	(0140.0)	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"			
	2.5 Kpa	101.7	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
	(50 psf)	(6972.4)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"				
	3.5 Kpa	113.7	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
	(70 psf)	(7794.9)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
10 E matras	1.5 1/20	00.5	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	0.20M top				
(25 feet)	1.0 Kµa (20 nsf)	90.0	1-25M+1-15W l0p	1-25M+1-20M hot	2-25M hot	1-30W+1-25W top	2-30W top 2-30M bot				
(55 1661)	(50 psi)	(0010.0)	2-10M @ 7.5"	2-10M @ 7.5"	2-25W DOL 2-10M @ 7.5"	2-10M @ 7.5"	2-30W DOL 2-10M @ 7.5"				
	2.5 Kpa	109.9	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	E TOIL O TIO				
	(50 psf)	(7529.7)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa	123.2	2-25M top	2-25M top	1-30M+1-25M top	2-30M top					
	(70 psf)	(8442.7)	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
10	4.5.16.1	100.1	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	0.0014				
12 metres	1.5 Kpa	106.4	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top				
(40 feet)	(30 pst)	(7294.0)	1-25IVI+1-20IVI DOL 2_10M @ 7.5"	2-25WI DOL 2-10M @ 7.5"	2-25WI DOL 2-10M @ 7.5"	1-30INH1-25IN DOL 2-10M @ 7.5"	2-30WI DOL 2-10M @ 7.5"				
	2.5 Kna	121.5	1-25M+1-20M ton	2-101/1 @ 7.0 2-25M ton	1-30M+1-25M ton	2-10W @ 7.0 2-30M ton	∠-101v1 \@ 7.J				
	(50 psf)	(8330.4)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
	(··· P=·)	(2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa	136.7	2-25M top	1-30M+1-25M top	2-30M top						
	(70 psf)	(9366.7)	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"						





(203mm)

8″

Lintel Width = 8" (203 mm) Lintel Depth = 24" (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 7.5" = use two 10M stirrups @ 7.5" 0/C

	0	Total Fastered			Minimum	Reinforceme	nt for Lintel	s in Load Bea	aring Walls		
Floor Clear	Ground snow	Iotal Factored			Carry	ying Second	Storey ICF +	Light Frame	Roof		
Span	IO20	Uniform Load	0.0 m (2.#)	1.2 m (4.#)	1 E m (E ff)		a 1 m (7 #)	(Teet)	2.7 m (0.4)	2.0 m (10.#)	2.2 m (11 ft)
metres (reet)	Kpa (psr)	KN/M (IDS/II)	U.9 M (3 Π)	1.2 m (4 π)	1.5 m (5 π)	1.8 m (6 m)	2.1 m (/ π)	2.4 m (8 π)	2.7 m (9 π)	3.0 m (10 π)	3.3 m (11 m)
3 IIIettes	1.0 Kµa (20 nof)	02.4 (0500.1)	1-15W lop	1-15W lop	1-15W LUP	1-20M bot	2-15W LOP	1-20W lup			
(TO leet)	(ou hei)	(3592.1)	1-15WI DUL.	1-15WI DUL.	1-10W DUL.	1-20101 DUL.	2-15WI DUL.	1-20101 DUL.			
	2.5.Kpg	56.7	1 15M top	1 15M top	1 15M top	1 20M top	2-10W @ 0.0	10101 @ 5.5			
	2.0 Kµd	(2000.0)	1 15M hot	1 15M hot	1 15M bot	1-20101 top	2-15W top				
	(50 hsi)	(3000.2)	1-15W DUL 10M @ 5.5"	1-15W DOL.	1-15W DUL.	1-201WI DUL.	2-15W DOL.				
	2.5. Kpp	61.0	1 15M top	1 15M top	1 15M top	1 20M top	2-10W @ 0.0				
	(70 nef)	(4184.3)	1-15M hot	1-15M hot	1-15M hot	1-20M bot	2-15M hot				
	(70 psi)	(4104.3)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"				
4.5 metres	1.5 Kna	60.8	1-15M ton	1-15M ton	1-15M ton	1-20M ton	2-10W @ 3.3				
(15 feet)	(30 nef)	(4168.0)	1-15M hot	1-15M hot	1-15M hot	1-20M hot	2-15M hot				
(101007)	(00 por)	(1100.0)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"				
	2.5 Kpa	66.9	1-15M top	1-15M top	1-15M top	1-20M top	E TOM & 0.0				
	(50 psf)	(4587.5)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.					
	(00 poi)	(100110)	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"					
	3.5 Kpa	73.1	1-15M top	1-15M top	1-20M top	2-15M top					
	(70 psf)	(5006.9)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
	(- P-)	(,	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"					
6.0 metres	1.5 Kpa	70.7	1-15M top	1-15M top	1-20M top	2-15M top					
(20 feet)	(30 psf)	(4845.2)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
(/	(******	(,	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"	2-10M @ 5.5"					
	2.5 Kpa	78.6	1-15M top	1-15M top	1-20M top						
	(50 psf)	(5388.1)	1-15M bot.	1-15M bot.	1-20M bot.						
	,	· · /	10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	86.5	1-15M top	1-15M top	1-20M top						
	(70 psf)	(5930.9)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
7.5 metres	1.5 Kpa	80.3	1-15M top	1-15M top	1-20M top						
(25 feet)	(30 psf)	(5507.2)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	2.5 Kpa	89.9	1-15M top	1-15M top	1-20M top						
	(50 psf)	(6165.2)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	3.5 Kpa	99.5	1-15M top	1-15M top							
	(70 psf)	(6823.1)	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"							
9 metres	1.5 Kpa	93.5	1-15M top	1-15M top	1-20M top						
(30 feet)	(30 psf)	(6410.2)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 5.5"	10M @ 5.5"	10M @ 5.5"						
	2.5 Kpa	105.5	1-15M top	1-15M top							
	(50 psf)	(7232.7)	1-15M bot.	1-15M bot.							
			10M @ 5.5"	10M @ 5.5"							
	3.5 Kpa	117.5	1-15M top	1-20M top							
	(/U pst)	(8055.2)	1-15M bot.	1-2010 bot.							
105	4.5.10	400.0	10M @ 5.5	10M @ 5.5							
10.5 ITIELIES	1.0 Kpa	100.3	1 15M bot	1 15M bot							
(30 leet)	(ou hei)	(00/7.0)	1-15WI DUL.	1-15WI DUL.							
	2.5.Kpg	119.7	1 15M top	1 20M top							
	2.0 Kµd (50 pcf)	(7700.0)	1 15M bot	1-20W top							
	(50 hsi)	(7790.0)	1-15W DUL 10M @ 5.5"	1-20101 DOL.							
	3.5 Kna	127.0	1-15M ton	10101 @ 0.0							
	(70 nef)	(8702 0)	1-15M hot								
	(10 hai)	(0102.3)	10M @ 5.5"								
12 metres	1.5 Kna	110.2	1-15M ton	1-20M ton							
(40 feet)	(30 nsf)	(7554.3)	1-15M hot	1-20M hot							
(10 1001)	(00 por)	(1001.0)	10M @ 5.5"	10M @ 5.5"							
	2.5 Kna	125.3	1-15M top	1011 8 010							
	(50 psf)	(8590.6)	1-15M bot								
	(poi)	(10M @ 5.5"								
	3.5 Kpa	140.5	1-15M top								
	(70 psf)	(9626.9)	1-15M bot.								
	,		10M @ 5.5"								



Lintel Width = 10" (254 mm) Lintel Depth = 10" (254 mm) Effective Depth = 8" (203 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 5.5" = use two 10M stirrups @ 5.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum	Reinforceme	nt for Lintels	s in Load Bea	aring Walls Roof		
Span	load	Uniform Load			Garry	Linte	Span - Metres	(feet)			
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	52.8	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	2-20M top	. , ,
(10 feet)	(30 psf)	(3618.6)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	
	2.5 Kpa	57.1	1-15M top	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top		
	(50 psf)	(3914.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.		
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	10M @ 6.5"		
	3.5 Kpa	61.4	1-15M top	1-15M top	1-15M top	1-20M top	1-20M top	2-15M top	2-20M top		
	(70 pst)	(4210.8)	1-15W DOT.	1-15M DOL	1-15M DOT.	1-20101 DOT.	1-20101 DOT.	2-15M DOT.	2-2010 DOT.		
4.5 metrec	1.5 Kna	61.2	1.15M top	1.15M top	10101 @ 0.0	1.20M top	1.20M top	2-10WI@0.0	2-10101 @ 0.5		
4.5 feet)	(30 nef)	(4194.5)	1-15M hot	1-15M hot	1-15M hot	1-20M hot	1-20M hot	2-15M hot	2-20M top		
(101000)	(00 p31)	(+134.5)	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	2-10M @ 6.5"		
	2.5 Kpa	67.3	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top	1-25M top	E TOM & 0.0		
	(50 psf)	(4614.0)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
	,	. ,	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"	10M @ 6.5"			
	3.5 Kpa	73.4	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
	(70 psf)	(5033.4)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"				
6.0 metres	1.5 Kpa	71.1	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
(20 feet)	(30 psf)	(4871.8)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
	0.5.1/	70.0	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"				
	2.5 Kpa	/9.0	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
	(ou hei)	(0414.0)	1-10W DUL	1-15WI DUL.	1-15WI DUL.	1-20101 DUL.	2-15WI DUL.				
	3 5 Kna	86.9	1-15M ton	1-15M ton	1-20M ton	1-20M ton	2-10W @ 0.5				
	(70 nsf)	(5957.5)	1-15M hot	1-15M hot	1-20M hot	1-20M bot	1-25M hot				
	(10 poi)	(000110)	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"				
7.5 metres	1.5 Kpa	80.7	1-15M top	1-15M top	1-15M top	1-20M top	2-15M top				
(25 feet)	(30 psf)	(5533.7)	1-15M bot.	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.				
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"				
	2.5 Kpa	90.3	1-15M top	1-15M top	1-20M top	2-15M top					
	(50 psf)	(6191.7)	1-15M bot.	1-15M bot.	1-20M bot.	2-15M bot.					
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"					
	3.5 Kpa	99.9	1-15M top	1-15M top	1-20M top						
	(70 pst)	(6849.7)	1-15W DOL 10M @ 6.5"	1-15M DOL 10M @ 6.5"	1-20101 DOT.						
0 metrec	1.5 Kna	03.0	1.15M top	1.15M top	1.20M top	2-15M top					
(30 feet)	(30 nsf)	(6436.7)	1-15M hot	1-15M hot	1-20M hot	2-15M hot					
(001001)	(00 poi)	(0100.17)	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"	2-10M @ 6.5"					
	2.5 Kpa	105.9	1-15M top	1-15M top	1-20M top						
	(50 psf)	(7259.2)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
	3.5 Kpa	117.9	1-15M top	1-15M top	1-20M top						
	(70 psf)	(8081.7)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
10.5 metres	1.5 Kpa	100.7	1-15M top	1-15M top	1-20M top						
(35 teet)	(30 pst)	(6903.6)	1-15W DOL 10M @ 6.5"	1-15M DOL 10M @ 6.5"	1-20101 DOT.						
	2.5 Kna	114.0	1.15M top	1.15M top	1.20M top						
	(50 nef)	(7816.5)	1-15M hot	1-15M hot	1-20M hot						
	(00 poi)	(1010.0)	10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
	3.5 Kpa	127.4	1-15M top	1-15M top							
	(70 psf)	(8729.5)	1-15M bot.	1-15M bot.							
			10M @ 6.5"	10M @ 6.5"							
12 metres	1.5 Kpa	110.6	1-15M top	1-15M top	1-20M top						
(40 feet)	(30 psf)	(7580.8)	1-15M bot.	1-15M bot.	1-20M bot.						
			10M @ 6.5"	10M @ 6.5"	10M @ 6.5"						
	2.5 Kpa	125.7	1-15M top	1-15M top							
	(50 psf)	(8617.2)	1-15M bot.	1-15M bot.							
	0.5.1/	140.0	10M @ 6.5"	10M @ 6.5"							
	3.5 Kpa	14U.8 (06E2.5)	1-15M bot	1-20M top							
	(10 h21)	(0000.0)	10M @ 6.5"	1-201W DUL 10M @ 6.5"							
1			10101 @ 0.0	10101 @ 0.0							



Lintel Width = 10" (254 mm) Lintel Depth = 12" (305 mm) Effective Depth = 10" (254 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 6.5" = use two 10M stirrups @ 6.5" 0/C

	0	Total Fastered			Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Floor Clear	GLORING SUDA	Initerm Load			Carry	ling Secona	Storey ICF +	Light Frame	ROOT		
opan metres (feet)	Kna (nef)	KN/m (lhs/ft)	0.0 m (3.ft)	1 2 m (4 ft)	15m (5ft)	1.8 m (6 ft)	2 1 m (7 ft)	2 / m (8 ft)	2.7 m (0.ft)	3.0 m (10 ft)	3 3 m (11 ft)
3 metres	1.5 Kna	53.6	1-20M ton	1-20M top	1-20M ton	1-20M top	1-20M top	1-20M ton	1-20M ton	2-15M top	1-20M+1-15M ton
(10 feet)	(30 psf)	(3671.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.
(101000)	(00 poi)	(007.117)	no stirrups	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	2.5 Kpa	57.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top
	(50 psf)	(3967.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
	,	· · /	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	3.5 Kpa	62.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(70 psf)	(4263.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
4.5 metres	1.5 Kpa	62.0	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
(15 feet)	(30 psf)	(4247.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	2.5 Kpa	68.1	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(50 psf)	(4667.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
			no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"
	3.5 Kpa	74.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top	2-20M top	
	(70 psf)	(5086.5)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.	2-20M bot.	
		74.0	no stirrups	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	
6.0 metres	1.5 Kpa	/1.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top
(20 feet)	(30 pst)	(4924.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.
	0.5.1/	70.0	no stirrups	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	2-10M @ 9.5	2-10M @ 9.5	2-10M @ 9.5	2-10M @ 9.5
	2.5 Kpa	/9.8	1-20101 top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	
	(ou psi)	(0407.7)	T-201VI DOL	1-201VI DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	2-15WI DOL.	1-20WI+1-15WI DOL.	2-20101 DOL.	
	0.5. Kpg	07.7	1 20M top	1 00M top	1 00M top	1 00M top	1 00M top	2-10W @ 9.5	2-10W @ 9.5	2-10IVI @ 9.5	
	3.3 Kµa (70 pcf)	0/./	1-20101 top	1-20W top	1-20W top	1-20M bot	1-20W top	2-15W top 2.15M bot	1-20101+1-15101 LUP		
	(70 psi)	(0010.3)	1-20W DOL 10M @ 0.5"	1-20W DUL 10M @ 0.5"	1-20101 DUL.	1-201WI DUL.	1-20W DUL 10M @ 0.5"	2*15W DUL 2.10M @ 0.5″	1-20WI+1-15WI DUL. 2.10M @ 0.5″		
7.5 metres	1.5 Kna	81.5	1-20M top	1-20M top	1-20M top	1_20M top	1_20M top	2-10W @ 9.0 2-15M top	2-10W @ 9.0		
(25 feet)	(30 ncf)	(5586.8)	1-20M top	1-20M bot	1-20M hot	1-20M bot	1-20M bot	2-15M top	1-20M+1-15M bot		
(20 1001)	(50 psi)	(5500.0)	no stirrups	10M @ 0.5"	10M @ 0.5"	10M @ 0.5"	10M @ 0.5"	2-10M @ 0.5"	2_10M @ 0.5″		
	2 5 Kna	91.1	1-20M ton	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-15M ton	2 1010 8 0.0		
	(50 nsf)	(6244.8)	1-20M hot	1-20M hot	1-20M hot	1-20M hot	1-20M hot	2-15M hot			
	(00 poi)	(021110)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"			
	3.5 Kpa	100.7	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top			
	(70 psf)	(6902.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.			
	,	· · /	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	2-10M @ 9.5"			
9 metres	1.5 Kpa	94.7	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top			
(30 feet)	(30 psf)	(6489.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"			
	2.5 Kpa	106.7	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-25M top			
	(50 psf)	(7312.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-25M bot.			
			10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"	10M @ 9.5"			
	3.5 Kpa	118.7	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top				
	(70 psf)	(8134.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.				
		10: -	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"				
10.5 metres	1.5 Kpa	101.5	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top			
(35 feet)	(30 pst)	(6956.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.			
	0.5.1/	444.0	10M @ 9.5	10M @ 9.5	10M @ 9.5	10M @ 9.5	2-10M @ 9.5	2-10M @ 9.5			
	2.5 Kpa	(7000 0)	1-20101 top	1-20101 top	1-20101 top	1-20101 top	2-15W top				
	(ou psi)	(7809.0)	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	1-20101 DOL.	2-15W DOL				
	2.5. Kpp	100.1	1 20M top	1 20M top	1 20M top	10W @ 9.5	2-10W @ 9.5				
	3.3 Kµd (70 pcf)	(0702 5)	1-2010 top	1-20W top	1-2010 top	2-15W top	1.20M+1-15W top				
	(10 h2l)	(0102.0)	1-20101 DUL 10M @ 0.5″	10M @ 0.5"	1-2010 DUL 10M @ 0.5″	2-10₩ 00L 2-10M @ 0.5″	2-10M @ 0.5"				
12 metres	1.5 Kna	111.4	1-20M ton	1-20M ton	1-20M ton	2-10₩/₩ 9.0 1-20M ton	2-10W @ 9.0				
(40 feet)	(30 nsf)	(7633.9)	1-20M hot	1-20M hot	1-20M hot	1-20M hot	2-15M hot				
(10 1001)	(oo hai)	(1000.0)	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"				
	2.5 Kna	126.5	1-20M ton	1-20M ton	1-20M ton	2-15M ton	2 1011 @ 0.0				
	(50 nsf)	(8670.2)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.					
	()	(,	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"					
	3.5 Kpa	141.6	1-20M top	1-20M top	1-20M top	2-15M top					
	(70 psf)	(9706.5)	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.					
	,	. ,	10M @ 9.5"	10M @ 9.5"	10M @ 9.5"	2-10M @ 9.5"					



Lintel Width = 10" (254 mm) Lintel Depth = 16" (406 mm) Effective Depth = 14" (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi) **Legend** 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 9.5" = use two 10M stirrups @ 9.5" O/C

					Minimum	Reinforceme	nt for Lintels	in Load Bea	aring Walls		
Floor Clear	Ground snow	Iotal Factored			Carry	ing Second	Storey ICF +	Light Frame	Roof		
Spall motros (foot)	IUau Kno (nof)	VIIIOIII LUdu	2.6 m (12.ft)	2.0 m (12.ft)	4.2 m (14.ft)	4 5 m (15 ft)	1 Span - Wetres	(ieel)	5.4 m (10 ft)	5.7 m (10.#)	6.0 m (20.ft)
3 metres	1.5 Kna	53.6	2-20M ton	1-25M+1-15M ton	4.2 III (14 II)	4.5 11 (15 11)	4.0 111 (10 11)	5.1 III (17 II)	5.4 III (10 II)	5.7 III (19 II)	0.0 111 (20 11)
(10 feet)	(30 nef)	(3671.7)	2-20M hot	1-25M+1-15M top	1-25M+1-20M top						
(101000)	(00 p31)	(00/1./)	2-10M @ 9.5"	2_10M @ 9.5"	2_10M @ 9.5"						
	2.5 Kna	57.9	2-10W @ 5.5	2-10WI @ 3.3	2-10WI @ 3.3						
	(50 nsf)	(3967.8)	2-20M hot								
	(00 por)	(0001.0)	2-10M @ 9.5"								
	3.5 Kna	62.2	1-25M+1-15M ton								
	(70 nsf)	(4263.9)	1-25M+1-15M hot								
	(10 por)	(1200.0)	2-10M @ 9.5"								
4.5 metres	1.5 Kpa	62.0	1-25M+1-15M top								
(15 feet)	(30 psf)	(4247.6)	1-25M+1-15M bot.								
(/	(******	(.,	2-10M @ 9.5"								
	2.5 Kpa	68.1									
	(50 psf)	(4667.0)									
	,	· · /									
	3.5 Kpa	74.2									
	(70 psf)	(5086.5)									
6.0 metres	1.5 Kpa	71.9									
(20 feet)	(30 psf)	(4924.8)									
	2.5 Kpa	79.8									
	(50 psf)	(5467.7)									
	3.5 Kpa	87.7									
	(70 psf)	(6010.5)									
7.5 metres	1.5 Kpa	81.5									
(25 feet)	(30 psf)	(5586.8)									
	2.5 Kpa	91.1									
	(50 psf)	(6244.8)									
	0.5.1/	400.7									
	3.5 Kpa	100.7									
	(70 pst)	(6902.7)									
0 motros	1.5.Kpg	04.7									
(20 feet)	(20 pcf)	(6400.0)									
(30 1661)	(au hai)	(0409.0)									
	2.5 Kna	106.7									
	(50 nef)	(7312.3)									
	(50 p31)	(7012.0)									
	3.5 Kna	1187									
	(70 psf)	(8134.7)									
	(10 poi)	(010111)									
10.5 metres	1.5 Kpa	101.5									
(35 feet)	(30 psf)	(6956.6)									
	/	· · /									
	2.5 Kpa	114.8									
	(50 psf)	(7869.6)									
	3.5 Kpa	128.1									
	(70 psf)	(8782.5)									
12 metres	1.5 Kpa	111.4									
(40 feet)	(30 psf)	(7633.9)									
	2.5 Kpa	126.5									
	(50 psf)	(8670.2)									
	3.5 Kpa	141.6									
	(70 psf)	(9706.5)									



Lintel Width = 10° (254 mm) Lintel Depth = 16° (406 mm) Effective Depth = 14° (355 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar 2-10M @ 9.5" = use two 10M stirrups @ 9.5" 0/C

Floor Clear	Ground snow	Total Factored			Minimum	Reinforceme	nt for Lintels	s in Load Bea	aring Walls Roof		
Span	load	Uniform Load			Vari	Linte	Soan - Metres	(feet)	NUUI		
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)
3 metres	1.5 Kpa	54.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
(10 feet)	(30 psf)	(3724.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
			No stirrups	No stirrups	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"
	2.5 Kpa	58.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top
	(50 psf)	(4020.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.
	2 E Kno	62.0	No stirrups	No stirrups	No stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12
	(70 nef)	(4316.9)	1-20M top	1-20M hot	1-20M bot	1-20M hot	1-20M hot	1-20M hot	1-20M top	2-15M top 2-15M hot	2-15W top 1-15M+1-10M bot
	(10 p31)	(4010.3)	No stirruns	No stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"
4.5 metres	1.5 Kpa	62.7	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top
(15 feet)	(30 psf)	(4300.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.
			No stirrups	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"
	2.5 Kpa	68.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top
	(50 psf)	(4720.1)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.
	0.5.1/	75.0	No stirrups	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"
	3.5 Kpa (70 pcf)	/ 0.U (5120.6)	1-20IVI top	1-20M top	1-20M bot	1-20M bot	1-20M bot	1-20M bot	2-15M top	2-15W top 2.15M bot	1-20M+1-15M top
	(70 psi)	(3139.0)	No stirrups	No stirrups	1-201W DOL.	1-2010 DOL.	1-201WI DOL.	1-201WI DUL. 10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
6.0 metres	1.5 Kpa	72.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	2-15M top	1-20M+1-15M top
(20 feet)	(30 psf)	(4977.9)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.
	,	. ,	No stirrups	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	2.5 Kpa	80.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(50 psf)	(5520.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
		00.5	No stirrups	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	3.5 Kpa	88.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(70 psi)	(0003.0)	1-20W DOL No stirrups	1-20101 DOL 10M @ 12"	1-20101 DOL. 10M @ 12"	1-20101 DUL. 10M @ 12"	1-20101 DOL. 10M @ 12"	1-20101 DOL. 10M @ 12"	2-10M @ 12"	1-20WI+1-15WI DOL 2-10M @ 12"	2-20W DUL 2-10M @ 12"
7.5 metres	1.5 Kpa	82.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-10M @ 12	1-20M+1-15M top	2-20M top
(25 feet)	(30 psf)	(5639.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
. ,			No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	2.5 Kpa	91.9	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top
	(50 psf)	(6297.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.
	0.5.1/22	101.5	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"
	3.3 Kµa (70 pcf)	(6055.8)	1-20101 t0p	1-20101 t0p	1-20101 top	1-20M bot	1-20101 top	2-15W top 2-15M bot	1-20M+1-15M top	2-20101 t0p 2-20104 hot	1-25M+1-15W top
	(10 p31)	(0000.0)	No stirruns	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"
9 metres	1.5 Kpa	95.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top
(30 feet)	(30 psf)	(6542.8)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.
			No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"
	2.5 Kpa	107.5	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-20M top
	(50 psf)	(7365.3)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-20M bot.
	2.5. Kno	110.5	No stirrups	10M @ 12	10M @ 12	10M @ 12	10M @ 12	2-10M @ 12	2-10M @ 12	2-10M @ 12	2-10M @ 6
	(70 nef)	(8187.8)	1-20M top	1-20M hot	1-20M bot	1-20M hot	1-20M hot	2-15M top	2-2010 top 2-2010 hot	1-25M+1-15M top	1-25M+1-20M hot
	(10 poi)	(0101.0)	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6.25"	2-10M @ 6"
10.5 metres	1.5 Kpa	102.3	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top
(35 feet)	(30 psf)	(7009.7)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.
			No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"
	2.5 Kpa	115.6	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top
	(50 psf)	(7922.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.
	2.5.Kpg	129.0	NO STIFFUPS	10M @ 12	10M @ 12	10W @ 12	10M @ 12	2-10M @ 12	2-10M @ 12	2-10M @ 6	2-10M @ b
	(70 nef)	(8835.6)	1-20M top	1-20M hot	1-20M bot	1-20M hot	2-15M top	1-20M+1-15M top	2-2010 top 2-2010 hot	1-25M+1-20M hot	2-25M hot
	(i o hoi)	(0000.0)	No stirruns	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"
12 metres	1.5 Kpa	112.2	1-20M top	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top
(40 feet)	(30 psf)	(7687.0)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.
			No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"
	2.5 Kpa	127.3	1-20M top	1-20M top	1-20M top	1-20M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	2-25M top
	(50 pst)	(8/23.3)	1-2UM bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	2-25M bot.
	3.5 Kna	149.4	1-20M ton	1-20M ton	1-20M ton	1-20M ton	2-10WI @ 12 2-15M ton	2-10₩ @ 12 1-20M+1-15M top	2-10₩ @ 12 1-25M±1-15M ton	2-10WI@0 1-25M∔1-20M ton	2-101/1 @ 0 2-25M ton
	(70 nsf)	(9759.6)	1-20M bot.	1-20M bot.	1-20M bot.	1-20M bot.	2-15M bot.	1-20M+1-15M hot	1-25M+1-15M bot	1-25M+1-20M hot	2-25M hot.
	A 11.7	(·····)	No stirrups	10M @ 12"	10M @ 12"	10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"





Lintel Width = 10" (254 mm) Lintel Depth = 20 (508 mm) Effective Depth = 17.8" (452 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 1-20M top = top rebar 1-20M bot.= bottom rebar

2-10M @ 12" = use two 10M stirrups @ 12" 0/C

Floor Clear	Ground snow	Total Factored			Minimum Carr	Reinforceme ying Second	nt for Lintels Storey ICF +	in Load Bea Light Frame	aring Walls Roof		
Span metres (feet)	IOAd Kna (nef)	UNITORM LOad	3 6 m (12 #)	3 9 m (13 #)	4 2 m (14 ft)	Linte	4 8 m (16 ft)	(IEEE)	54m (18ff)	57m (10 #)	6 0 m (20 ft)
3 metres	1.5 Kpa	54.3	1-20M+1-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top
(10 feet)	(30 psf)	(3724.8)	1-20M+1-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.
			2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"
	2.5 Kpa	58.7	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top	
	(ou psi)	(4020.8)	1-20101+1-15101 DOL. 2-1010 @ 12"	2-2010 DOL 2-10M @ 12"	1-25IVI+1-15IVI DOL 2_10M @ 12"	1-25IVI+1-20IVI DOL 2-10M @ 12"	2-25WI DOL 2-10M @ 12"	2-25WI DOL 2-10M @ 12"	1-30IVI+1-25IVI DOL. 2-10M @ 6"	2-30WI DOL 2-10M @ 6"	
	3.5 Kpa	63.0	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	2-30M top	
	(70 psf)	(4316.9)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	2-30M bot.	
			2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	
4.5 metres	1.5 Kpa	62.7	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top	2-30M top	
(15 feet)	(30 pst)	(4300.6)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.	2-30M bot.	
	2 5 Kna	68.9	2-10M @ 12 2-20M ton	2-10W @ 12 1-25M+1-15M ton	2-10M @ 12 1-25M+1-20M ton	2-10WI@12 2-25M ton	2-10WI@12 1-30M+1-25M ton	2-10M @ 6 1-30M+1-25M ton	2-10W/@ 6	2-10WI@6	
	(50 psf)	(4720.1)	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.		
	,	× ,	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"		
	3.5 Kpa	75.0	2-20M top	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top			
	(70 psf)	(5139.6)	2-20M bot.	1-25M+1-15M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.			
6.0 matras	1 5 Kno	70.6	2-10M @ 12	2-10M @ 12	2-10M @ 6	2-10M @ 6	2-10M @ 6	2-10M @ 6			
(20 feet)	(30 nsf)	(4977 9)	2-20101 top 2-20101 hot	1-25M+1-15M top	1-25M+1-20M hot	2-25W top 2-25M hot	1-30M+1-25M hot	2-30W top 2-30M hot			
(201007)	(00 poi)	(1011.0)	2-10M @ 12"	2-10M @ 12"	2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"			
	2.5 Kpa	80.5	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top				
	(50 psf)	(5520.7)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 12"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
	3.5 Kpa	88.5	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top				
	(70 pst)	(0003.0)	1-20WH1-10W DOL 2-10M @ 6"	2-25W DOL 2-10M @ 6"	2-25W DOL 2-10M @ 6"	1-30IVI+1-23IVI DOL 2-10M @ 6"	2-30W DOL 2-10M @ 6"				
7.5 metres	1.5 Kpa	82.3	1-25M+1-15M top	1-25M+1-20M top	2-10W @ 0	1-30M+1-25M top	2-30M top				
(25 feet)	(30 psf)	(5639.8)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.				
			2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"				
	2.5 Kpa	91.9	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
	(50 pst)	(6297.8)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
	3.5 Kna	101.5	2-1010 @ 0 2-25M top	2-10101@0	2-10W @ 0 1-30M+1-25M ton	2-10WI@0					
	(70 psf)	(6955.8)	2-25M bot.	2-25M bot.	1-30M+1-25M bot.						
	,	· · · /	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
9 metres	1.5 Kpa	95.5	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top					
(30 feet)	(30 psf)	(6542.8)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.					
	2.5 Kna	107.5	2-10M @ 6	2-10M @ 6	2-10M @ 6	2-10M @ 6					
	2.3 Kpa (50 nsf)	(7365.3)	2-25M top	1-30M+1-25M top	2-30M top						
	(** (**))	()	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	3.5 Kpa	119.5	2-25M top	2-30M top							
	(70 psf)	(8187.8)	2-25M bot.	2-30M bot.							
10.5 matros	1 5 1/20	100.0	2-10M @ 6"	2-10M @ 6"	1.00M-1.05M top						
(35 feet)	(30 nsf)	(7009.7)	2-25W top 2-25M hot	2-25W top 2-25M hot	1-30M+1-25M hot						
(00 1001)	(00 poi)	(1000.1)	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	2.5 Kpa	115.6	2-25M top	1-30M+1-25M top	2-30M top						
	(50 psf)	(7922.6)	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
	0 5 1/-	100.0	2-10M @ 6"	2-10M @ 6"	2-10M @ 6"						
	3.3 Kµa (70 nef)	(8835.6)	1-30M+1-25M top	2-30₩ top 2-30M hot							
	(70 p31)	(0000.0)	2-10M @ 6"	2-10M @ 6"							
12 metres	1.5 Kpa	112.2	2-25M top	1-30M+1-25M top							
(40 feet)	(30 psf)	(7687.0)	2-25M bot.	1-30M+1-25M bot.							
			2-10M @ 6"	2-10M @ 6"							
	2.5 Kpa	127.3	1-30M+1-25M top	2-30M top							
	(ou psi)	(0123.3)	1-30101+1-23101 DOT. 2-1010 @ 6"	2-301VI DOL 2-10M @ 6"							
	3.5 Kpa	142.4	2-30M top	2 1011 8 0							
	(70 psf)	(9759.6)	2-30M bot.								
			2-10M @ 6"								
20° (508m)	17 8" (J52mm)		(mand) US	17.8° (452mm)		Lintel Width = 1 Lintel Depth = 2 Effective Depth = F'c @ 28 days = Fy = 400 Mpa (6	0″ (254 mm) 0 (508 mm) = 17.8″ (452 mm 20 Mpa 30 ksi))	Legend 1-20M top = top 1-20M bot.= bot 2-10M @ 12~ = t	rebar tom rebar use two 10M stir	rups @ 12″ O/C
10″ (2	254mm)		10″ (2	54mm)		* check application	ulity limite teh!-	A1 2 in annound	A to use this ch	art	

Floor Clear	Ground enow	Total Eactored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof										
Span	load	Uniform Load		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Span - Metres (feet) (2 #) 1.2 m (4 #) 1.5 m (5 #) 1.8 m (6 #) 2.4 m (6 #) 2.7 m (9 #) 2.										
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	0.9 m (3 ft)	1.2 m (4 ft)	1.5 m (5 ft)	1.8 m (6 ft)	2.1 m (7 ft)	2.4 m (8 ft)	2.7 m (9 ft)	3.0 m (10 ft)	3.3 m (11 ft)			
3 metres	1.5 Kpa	55.1	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top			
(10 feet)	(30 psf)	(3777.8)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.			
		50.4	no stirrups	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	59.4	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top			
	(ou psi)	(4073.9)	2-15IVI DOL	2-15IVI DOL	2-15IVI DOL	2-15IVI DOL	2-15WI DOL 2.10M @ 15"	2-15W DOL 2.10M @ 15"	2-15W DOL 2.10M @ 15"	2-10W DOL 2.10M @ 15"	2-15WI DOL.			
	3.5 Kna	63.8	2-15M ton	2-15M top	2-15M top	2-15M ton	2-10M @ 15	2-10W @ 15	2-10M @ 15	2-10W @ 15	2-10M @ 15			
	(70 psf)	(4370.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.			
	(/	(/	no stirrups	no stirrups	no stirrups	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
4.5 metres	1.5 Kpa	63.5	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top			
(15 feet)	(30 psf)	(4353.7)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.			
			no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	69.6	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top			
	(ou bsi)	(4773.2)	2-15W DOL	2-15W DOL	2-15IVI DOL.	2-15W DOL 2-10M @ 15"	2-15WI DOL 2-10M @ 15"	2-15W DOL 2-10M @ 15"	2-15W DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"			
	3.5 Kna	75.8	2-15M ton	2-15M top	2-15M top	2-10M @ 13	2-10M @ 13	2-15M ton	2-15M top	2-10M @ 13	2-10M @ 13			
	(70 psf)	(5192.6)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.			
	/	· · /	no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
6.0 metres	1.5 Kpa	73.4	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top			
(20 feet)	(30 psf)	(5031.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.			
			no stirrups	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	81.3	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top			
	(50 pst)	(55/3.8)	2-15M DOT.	2-15M DOT.	2-15M DOL 2 10M @ 15"	2-15M DOT.	2-15M DOT.	2-15W DOT. 2.10M @ 15"	2-15W DOL 2.10M @ 15"	2-15W DOT.	1-20M+1-15M DOT.			
	3.5 Kna	89.2	2-15M ton	2-15M ton	2-10M @ 13	2-10M @ 15	2-10M @ 15	2-10W @ 15	2-10W @ 15	2-10M @ 15	2-10M @ 15 1-20M+1-15M ton			
	(70 psf)	(6116.6)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.			
	((0.1.0.0)	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
7.5 metres	1.5 Kpa	83.1	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top			
(25 feet)	(30 psf)	(5692.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.			
			no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	92.7	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top			
	(50 pst)	(6350.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.			
	3.5 Kna	102.3	2-15M top	2-15M top	2-10W @ 15 2-15M ton	2-10W @ 15	2-10W @ 15	2-10WI@10 2-15M ton	2-10W @ 15	2-10W @ 15 1-20M+1-15M ton	2-10W @ 15			
	(70 psf)	(7008.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-20M+1-15M bot.			
	(()	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
9 metres	1.5 Kpa	96.2	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	1-20M+1-15M top			
(30 feet)	(30 psf)	(6595.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-20M+1-15M bot.			
			no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	108.2	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	2-20M top			
	(50 pst)	(7418.4)	2-15M DOL	2-15M DOL	2-15M DOL	2-15M DOL	2-15M DOT.	2-15W DOL	2-15W DOL	1-20M+1-15M DOL	2-20101 DOT.			
	3.5 Kna	120.2	2-15M ton	2-15M ton	2-10W @ 15	2-10W @ 15	2-10W @ 15	2-10WI@15 2-15M ton	2-10W @ 15	2-10₩ @ 15 1-20M+1-15M ton	2-10M @ 15 1-25M+1-15M ton			
	(70 psf)	(8240.9)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	1-25M+1-15M bot.			
	(,	()	no stirrups	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
10.5 metres	1.5 Kpa	103.0	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	2-20M top			
(35 feet)	(30 psf)	(7062.8)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.			
			no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	116.4	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	2-20M top			
	(50 pst)	(7975.7)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.			
	3.5 Kna	120.7	2-15M top	2-15M top	2-10WI@15	2-10WI@ 15	2-10WI@15	2-10WI@10 2-15MI.top	2-10WI@10 1-20Mi1-15M top	2-10W @ 15	2-10W @ 15 1-25M+1-15M top			
	(70 nsf)	(8888.7)	2-15M top	2-15M top	2-15M hot	2-15M top	2-15M top	2-15M hot	1-20M+1-15M top	2-20M top	1-25M+1-15M hot			
	(10 hai)	(0000.1)	no stirrups	10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"			
12 metres	1.5 Kpa	112.9	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	2-20M top			
(40 feet)	(30 psf)	(7740.0)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.			
	· · · · ·	· · · ·	no stirrups	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"			
	2.5 Kpa	128.0	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top			
	(50 psf)	(8776.3)	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.			
	0.5.1/	140.0	no stirrups	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"			
	3.5 Kpa	143.2	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	2-15M top	1-20M+1-15M top	1-25M+1-15M top	1-25M+1-20M top			
	(ru psi)	(3012.7)	2-13IVI DOL.	2-10W DOL 2-10M @ 15"	2-10₩ DOL 2-10M @ 15"	2-10₩ DOL 2-10M @ 15"	2-10W DOL 2-10M @ 15"	2-10₩ DOL 2-10M @ 15"	1-20101+1-15101 DOL 2_10M @ 15"	1-20101+1-10101 UOL 2=10M @ 7.5"	1-20WI+1-2UWI DOT. 2-10M @ 7.5"			
			no surrups	2-10WI @ 10	2-10WI @ 13	2-10W/@10	2-10WI @ 10	2-10WI @ 13	2"10WI@10	2-101VI @ 7.3	2-101VI @ 7.3			



553mm

21.8



Lintel Width = 10" (254 mm) Lintel Depth = 24 (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

Legend 2-15M top = top rebar 2-15M bot.= bottom rebar 2-10M @ 15" = use two 10M stirrups @ 15" 0/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof												
Span	load	Uniform Load		Carrying Second Storey ICF + Light Frame Roof Lintel Span - Metres (feet) 2 ft) 3.9 m (13 ft) 4.2 m (14 ft) 4.5 m (15 ft) 4.8 m (16 ft) 5.1 m (17 ft) 5.4 m (18 ft) 5.7 m (19 ft) 6.0 m												
metres (feet)	Kpa (psf)	KN/m (lbs/ft)	3.6 m (12 ft)	3.9 m (13 ft)	4.2 m (14 ft)	4.5 m (15 ft)	4.8 m (16 ft)	5.1 m (17 ft)	5.4 m (18 ft)	5.7 m (19 ft)	6.0 m (20 ft)					
3 metres	1.5 Kpa	55.1	2-15M top	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top					
(10 feet)	(30 pst)	(3777.8)	2-15M bot.	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot					
	2.5 Kna	50 /	2-10M @ 15 2-15M top	10M @ 15	2-10M @ 15 1-20M 1-15M top	2-10M @ 15	2-10M @ 15 1-25M+1-15M top	2-10M @ 15	2-10M @ 15 2-25M top	2-10M @ 15 2-25M top	2-10M @ 15					
	2.0 Kµd (50 nsf)	(4073.9)	2-15M top	1-20M+1-15M top	1-20M+1-15M top	2-2010 top	1-25M+1-15M top	1-25M+1-20M hot	2-25M top	2-25M hot	1-30M+1-25M hot					
	(50 psi)	(4073.3)	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-20W DOL 2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-25W DOL 2-10M @ 15"	2-25W DOL 2-10M @ 15"	2-10M @ 15"					
	3.5 Kpa	63.8	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top					
	(70 psf)	(4370.0)	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot					
	,	. ,	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"					
4.5 metres	1.5 Kpa	63.5	2-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top					
(15 feet)	(30 psf)	(4353.7)	2-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot					
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"					
	2.5 Kpa	69.6	1-20M+1-15M top	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top					
	(50 psf)	(4773.2)	1-20M+1-15M bot.	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.					
			2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"					
	3.5 Kpa	75.8	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top						
	(70 psf)	(5192.6)	1-20M+1-15M bot.	2-20M bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.						
0.0	4.5.10	70.4	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"						
b.U metres	1.5 Kpa	/3.4	1-20M+1-15M top	2-20M top	1-25M+1-15M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top						
(20 feet)	(30 pst)	(5031.0)	1-20M+1-15M bot.	2-2010 bot.	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-3UW+1-25M bot.	2-3UM bot.						
	9.5.Vm	01.0	2-10WI@15	2-10WI@15	2-10WI@15	2-10WI@15	2-10WI @ 15	2-10W @ 15	2-10W @ 7.5	2-10WI@7.5						
	2.0 Kµa (50 pcf)	01.3	1-20W+1-15W top	2-2010 top	1-20W+1-10W LOP	2-25W top	2-23W tup 2.25M bot	1-30IVI+1-23IVI LUP	2-30101 top 2.20M bot							
	(50 hsi)	(5575.0)	2 10M @ 15"	2-20W DOL 2.10M @ 15"	1-2JWF1-TJW DUL 2 10M @ 15"	2-2JW DUL 2 10M @ 7.5"	2-25WI DUL.	1-30IVI+1-23IVI DUL 2.10M @ 7.5"	2-30W DUL							
	3.5 Kna	89.2	2-10M @ 13	1-25M+1-15M ton	1-25M+1-20M ton	2-10W @ 7.5	1-30M+1-25M ton	2-10W @ 7.5	2-100 @ 7.5							
	(70 nsf)	(6116.6)	2-20M top	1-25M+1-15M hot	1-25M+1-20M hot	2-25M hot	1-30M+1-25M hot	2-30M hot	2-30M hot							
	(10 poi)	(0110.0)	2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"							
7.5 metres	1.5 Kpa	83.1	2-20M top	1-25M+1-20M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top							
(25 feet)	(30 psf)	(5692.9)	2-20M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.							
(,	(******	(2-10M @ 15"	2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"							
	2.5 Kpa	92.7	2-20M top	1-25M+1-20M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top								
	(50 psf)	(6350.9)	2-20M bot.	1-25M+1-20M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.								
			2-10M @ 15"	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"								
	3.5 Kpa	102.3	1-25M+1-15M top	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top									
	(70 psf)	(7008.9)	1-25M+1-15M bot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.									
			2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"									
9 metres	1.5 Kpa	96.2	2-20M top	1-25M+1-20M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top								
(30 feet)	(30 psf)	(6595.9)	2-20M bot.	1-25M+1-20M bot.	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.								
	0.5.1/	400.0	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"								
	2.5 Kpa	108.2	1-25M+1-15M top	2-25M top	2-25M top	1-30M+1-25M top	2-30M top									
	(ou psi)	(7418.4)	1-25IVI+1-15IVI DOL.	2-23WI DOL	2-25IVI DOL.	1-30IVI+1-25IVI DOL	2-30W DOL									
	2.5. Kpp	100.0	2-10WI@10	2-10W/@7.5	2-10W @ 7.3	2-10WI@7.5	2-10IVI @ 7.5									
	0.0 r.µa (70 nef)	(82/10 0)	1-25M+1-20M hot	2-23W top 2-25M hot	1-30M+1-25M bot	2-30M hot										
	(10 hai)	(0240.3)	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7 5"	2-10M @ 7.5"										
10.5 metres	1.5 Kna	103.0	1-25M+1-15M ton	1-25M+1-20M ton	2-25M ton	1-30M+1-25M ton	2-30M ton									
(35 feet)	(30 psf)	(7062.8)	1-25M+1-15M hot.	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M hot.	2-30M bot.									
(\·· F=-/	(,	2-10M @ 15"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"									
	2.5 Kpa	116.4	1-25M+1-20M top	2-25M top	1-30M+1-25M top	2-30M top										
	(50 psf)	(7975.7)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.										
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"										
	3.5 Kpa	129.7	2-25M top	2-25M top	1-30M+1-25M top	2-30M top										
	(70 psf)	(8888.7)	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.										
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"										
12 metres	1.5 Kpa	112.9	1-25M+1-20M top	2-25M top	1-30M+1-25M top	1-30M+1-25M top	2-30M top									
(40 feet)	(30 psf)	(7740.0)	1-25M+1-20M bot.	2-25M bot.	1-30M+1-25M bot.	1-30M+1-25M bot.	2-30M bot.									
			2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"	2-10M @ 7.5"									
	2.5 Kpa	128.0	2-25M top	2-25M top	1-30M+1-25M top	2-30M top										
	(50 psf)	(8776.3)	2-25M bot.	2-25M bot.	1-30M+1-25M bot.	2-30M bot.										
	0 5 1/	140.0	2-10M @ 7.5	2-10M @ 7.5	2-10M @ 7.5	2-10WI@7.5"										
	3.5 Kpa (70 pot)	(0010.7)	2-2010 LOP	1-30101+1-23101 (0P	2-301VI 10P											
	(70 psi)	(9012.7)	2-2010 DOL 2-10M @ 7.5"	1-30101+1-23101 DOL 2-10M @ 7.5"	2-3010 DOL 2-10M @ 7.5"											
			2-10WI@1.0	2-10WI @ 7.0	2-10WI @ 7.0											
- -		Ī	<u> </u>	T		Lintel Width = 1	0″ (254 mm)		Legend							





Lintel Depth = 24 (610 mm) Effective Depth = 21.8" (553 mm) F'c @ 28 days = 20 Mpa Fy = 400 Mpa (60 ksi)

2-15M top = top rebar 2-15M bot.= bottom rebar 2-10M @ 15" = use two 10M stirrups @ 15" 0/C



Tables for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof

USA

ILL 4x10	ILL 6x10	ILL 8x10	ILL 10x10
ILL 4x12	ILL 6x12	ILL 8x12	ILL 10x12
ILL 4x16	ILL 6x16	ILL 8x16	ILL 10x16
ILL 4x20	ILL 6x20	ILL 8x20	ILL 10x20
ILL 4x24	ILL 6x24	ILL 8x24	ILL 10x24





Floor Clear	Ground snow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls f						
Span	load	Uniform Load		Minimum Heinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet t 4 ft 5 ft 6 ft 7 ft 8 ft 9 ft 10 ft 10 ft 11 ft												
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft					
(10 feet)	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top										
		1738.1	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.										
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"										
	50 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top										
		2034.2	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.										
	70		#3@3.75	#3 @ 3./5	#3@3./5	#3 @ 3.75										
	70 psr	0000.0	1-#4 top	1-#4 top	1-#4 top											
		2330.3	1-#4 UUL. #2 @ 2 75″	1-#4 UUL. #2 @ 2 75″	1-#4 DUL. #2 @ 2 75″											
(15 feet)	30 nsf		1-#4 ton	#3 @ 3.75	#3 @ 3.75											
(101000)	00 por	2314.0	1-#4 bot.	1-#4 bot.	1-#4 bot.											
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"											
	50 psf		1-#4 top	1-#4 top												
		2733.5	1-#4 bot.	1-#4 bot.												
			#3 @ 3.75"	#3 @ 3.75″												
	70 psf		1-#4 top	1-#4 top												
		3152.9	1-#4 bot.	1-#4 bot.												
			#3 @ 3.75"	#3 @ 3.75"												
(20 feet)	30 pst		1-#4 top	1-#4 top												
		2991.3	1-#4 DOT.	1-#4 DOT.												
	50 nef		#3 @ 3.75	#3 @ 3.75												
	50 hsi	353/1 1	1-#4 top													
		0004.1	#3 @ 3 75"													
	70 psf		1-#4 top													
	·	4076.9	1-#4 bot.													
			#3 @ 3.75"													
(25 feet)	30 psf		1-#4 top													
		3653.2	1-#4 bot.													
			#3 @ 3.75"													
	50 psf		1-#4 top													
		4311.2	1-#4 DOT.													
	70 nef		#3 @ 3.75													
	70 psi	4969.2														
		1000.2														
(30 feet)	30 psf		1-#4 top													
		4556.2	1-#4 bot.													
			#3 @ 3.75"													
	50 psf															
		5378.7														
	70(
	70 pst	0.001														
		0201.2														
(35 feet)	30 nsf															
(001001)	00 por	5023.0														
		002010														
	50 psf															
		5936.0														
	70 psf															
		6849.0														
(10.5.1)	00(
(40 teet)	30 pst	5700.0														
		ə7UU.3														
	50 nef															
	00 hai	6736.6														
		0.00.0														
	70 psf															
		7773.0														



Lintel Width = $4^{"}$ Lintel Depth = $10^{"}$ Effective Depth = $7.8^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1.#4 top = top rebar 1.#4 bot.= bottom rebar #3 @ 3.75" = use #3 stirrup @ 3.75" O/C

Elees Clear	Cround on our	Total Eastarad		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Boof										
Floor Glear Snan	Ground Snow	Iotal Factored			Carry	ng secona s	torey wood i Lintel Snan - Fee	-rame + Lign	t Frame Roo	T				
Span	nef	lhs/ft	3.ft	/l ft	5.#	6 #	7 ft	8 ft	0 ft	10 ft	11 #			
(10 feet)	30 nsf	103/11	1-#4 ton	1-#4 ton	1-#4 ton	1-#4 ton	1-#4 ton	1-#4 ton	511	10 11	III			
(101000)	00 por	1748.6	1-#4 hot	1-#4 hot	1-#4 hot	1-#4 bot	1-#4 hot	1-#4 hot						
		11 10:0	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	50 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#4 top							
		2044.7	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.							
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"							
	70 psf		1-#4 top	1-#4 top	1-#4 top	1-#5 top								
		2340.8	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.								
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"								
(15 feet)	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top								
		2324.5	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.								
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"								
	50 psf		1-#4 top	1-#4 top	1-#4 top									
		2744.0	1-#4 bot.	1-#4 bot.	1-#4 bot.									
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"									
	70 psf		1-#4 top	1-#4 top	1 <i>-</i> #5 top									
		3163.4	1-#4 bot.	1-#4 bot.	1-#5 bot.									
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"									
(20 feet)	30 psf		1-#4 top	1-#4 top	1-#5 top									
		3001.7	1-#4 bot.	1-#4 bot.	1-#5 bot.									
			#3@4.5"	#3 @ 4.5"	#3 @ 4.5"									
	50 pst		1-#4 top	1-#4 top										
		3544.6	1-#4 bot.	1-#4 bot.										
	70 (#3 @ 4.5"	#3 @ 4.5"										
	70 pst	1007.1	1-#4 top	1-#4 top										
		4087.4	1-#4 DOT.	1-#4 DOT.										
(OE faat)	20 pof		#3@4.5	#3 @ 4.5										
(25 leet)	30 þsi	2662 7	1-#4 LOP	1-#4 l0p										
		3003.7	1°#4 DUL #2 @ 4.5″	1°#4 UUL. #2 @ 4 5″										
	50 nsf		#3 @ 4.5	#3 @ 4.5										
	00 p3i	4321 7	1-#4 hot	1-#/Lhot										
		4021.7	#3 @ 4 5"	#3 @ 4 5"										
	70 nsf		1-#4 top	10 0 1.0										
		4979.6	1-#4 bot.											
			#3 @ 4.5"											
(30 feet)	30 psf		1-#4 top											
. ,		4566.7	1-#4 bot.											
			#3 @ 4.5"											
	50 psf		1-#4 top											
		5389.2	1-#4 bot.											
			#3 @ 4.5"											
	70 psf		1-#4 top											
		6211.7	1-#4 bot.											
			#3 @ 4.5"											
(35 feet)	30 psf		1-#4 top											
		5033.5	1-#4 bot.											
			#3 @ 4.5"											
	50 psf		1-#4 top											
		5946.5	1-#4 bot.											
	70		#3 @ 4.5"											
	/U pst	C050 4												
		vocy.4												
(10 feet)	20 nof		1 #4 ton											
(40 1881)	ov psi	5710.0	1-#4 LUP											
		57 10.0	1"#4 UUL. #2 @ / ⊑"											
	50 nef		#0 w 4.0											
	oo hai	6747 1												
		VI 11.1												
	70 psf													
	P 2	7783.4												
	1													



Lintel Width = $4^{"}$ Lintel Depth = $12^{"}$ Effective Depth = $9.8^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#4 top = top rebar 1-#4 bot.= bottom rebar

1-#4 bot.= bottom rebar #3 @ 4.5" = use #3 stirrup @ 4.5" O/C

Floor Clear	Ground snow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls f						
Snan	Inad	Uniform I oad		Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet t 4 ft 5 ft 6 ft 7 ft 8 ft 9 ft 10 ft 11 ft												
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft					
(10 feet)	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		1769.4	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"					
	50 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top	1 <i>-#</i> 4 top	1-#5 top	1-#5 top	1-#6 top						
		2065.5	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"						
	70 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#5 top	1-#5 top	1-#5 top							
		2361.5	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.							
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
(15 feet)	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#5 top	1-#5 top	1-#5 top							
		2345.3	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.							
	F0(#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
	50 pst	0704.7	1-#4 top	1-#4 top	1-#4 top	1-#4 top	1-#5 top	1-#5 top								
		2/04./	1-#4 DOL	1-#4 DOL.	1-#4 DOL.	1-#4 DOL.	1-#5 DOL.	1-#3 DOL.								
	70 pof		#3 @ 0.0	#3 @ 0.0	#3 @ 0.0	#3 @ 0.0	#3 @ 0.0	#3 @ 0.5								
	70 psi	210/ 0	1-#4 l0p	1-#4 l0p	1-#4 l0p	1-#0 l0p	1-#0 LUP									
		3104.2	1°#4 DUL. #2 @ 6 5″	1+#4 DUL. #2 @ 6 5″	1-#4 DUL. #2 @ 6 5″	1=#J DUL. #2 @ 6 5″	1-#J DUL. #2 @ 6 5″									
(20 feet)	30 nef		#3@0.5	#3@0.5	#3@0.5	#3 @ 0.5	#3 @ 0.5									
(20 1661)	50 psi	3022.5	1-#4 top	1-#4 top	1-#4 top	1-#5 hot	1-#5 hot									
		JU22.J	#3@65"	#3@65″	#3@65″	#3@65″	#3@65″									
	50 nsf		1-#4 ton	1-#4 ton	1-#4 ton	1-#5 ton	#0 @ 0.0									
	00 por	3565.4	1-#4 hot	1-#4 hot	1-#4 hot	1-#5 hot										
		000011	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"										
	70 psf		1-#4 top	1-#4 top	1-#4 top											
		4108.2	1-#4 bot.	1-#4 bot.	1-#4 bot.											
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"											
(25 feet)	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#5 top										
		3684.4	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.										
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"										
	50 psf		1-#4 top	1-#4 top	1-#5 top											
		4342.4	1-#4 bot.	1-#4 bot.	1-#5 bot.											
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"											
	70 psf		1-#4 top	1-#4 top	1-#5 top											
		5000.4	1-#4 bot.	1-#4 bot.	1-#5 bot.											
(00 ())			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"											
(30 feet)	30 pst	4507.5	1-#4 top	1-#4 top	1-#5 top											
		4587.5	1-#4 DOT.	1-#4 DOT.	1-#5 DOT.											
	50 pcf		#3 @ 0.0	#3 @ 0.0	#3 @ 0.0											
	50 psi	5400.0	1-#4 top	1-#4 top												
		5405.5	#3@65"	#3@65″												
	70 nsf		1-#4 ton	1-#4 ton												
	. s poi	6232.4	1-#4 bot.	1-#4 bot.												
			#3 @ 6.5″	#3 @ 6.5"												
(35 feet)	30 psf		1-#4 top	1-#4 top	1-#5 top											
· · · · /	r.	5054.3	1-#4 bot.	1-#4 bot.	1-#5 bot.											
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"											
	50 psf		1-#4 top	1-#4 top												
		5967.3	1-#4 bot.	1-#4 bot.												
			#3 @ 6.5"	#3 @ 6.5"												
	70 psf		1-#4 top	1-#4 top												
		6880.2	1-#4 bot.	1-#4 bot.												
			#3 @ 6.5″	#3 @ 6.5"												
(40 feet)	30 psf		1-#4 top	1-#4 top												
		5731.6	1-#4 bot.	1-#4 bot.												
			#3 @ 6.5″	#3 @ 6.5"												
	50 psf		1-#4 top	1-#5 top												
		6767.9	1-#4 bot.	1-#5 bot.												
			#3 @ 6.5"	#3 @ 6.5"												
	/U pst	7004.0	1-#4 top													
		/804.2	1-#4 bot.													
			#3 @ 6.5"													



Lintel Width = 4" Lintel Depth = 16" Effective Depth = 13.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 6.5" = use #3 stirrup @ 6.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof												
Snan	Inad	Uniform I oad		Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet											
feet	nsf	lhs/ft	3 ft	4 ft	5.ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft				
(10 feet)	30 psf	120/11	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
. ,		1790.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.				
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
		2086.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.				
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top				
		2382.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top				
		2366.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
		2786.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top				
		3205.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″				
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
		3043.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top				
		3586.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top				
		4129.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″				
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top				
		3705.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7"	#3 @ 7"	#3 @ 7"				
	50 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top				
		4363.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
	70(#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"				
	70 pst	5004.0	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
		5021.8	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#6 DOT.	1-#8 DOT.	1-#8 DOT.	1-#9 DOT.				
(20 feet)	20 pof		#3@ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.3	#3 @ /	#3 @ 7	#3 @ 7	#3@7	#3 @ 7				
(30 1661)	30 psi	4608.8	1-#0 l0p	1-#0 l0p	1-#5 LUP	1-#5 LOP	1-#5 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 lUp				
		4608.8	1-#3 DUL. #3 @ 0.5″	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	1-#3 DOL.	1-#0 DUL.	1-#0 UUL.	1-#0 UUL. #2 @ 7"	1-#0 UUL. #2 @ 7"				
	50 pcf		#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 7	#3 @ 7	#3 @ 7	#3 @ / 1_#8 ton	#3 @ 7				
	50 p31	5/31 3	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#9 hot				
		J+01.0	1-#3 D0L #3 @ 8 5″	1-#3 000. #3 @ 8 5″	1-#3 D0L. #3 @ 8 5″	1-#3 D0L. #3 @ 8.5″	#2 @ 7″	1-#0 b0t. #3 @ 7″	1-#0 b0t. #3 @ 7″	1-#0 D0L. #3 @ 7″	1-#3 D0L. #3 @ 7″				
	70 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#8 ton	1-#8 ton	1-#9 ton	10 6 1				
	10 por	6253.8	1-#5 bot	1-#5 hot	1-#5 hot	1-#5 bot	1-#6 hot	1-#8 hot	1-#8 hot	1-#9 hot					
		0200.0	#3 @ 8 5"	#3 @ 8 5"	#3@85"	#3 @ 7"	#3 @ 7"	#3 @ 7″	#3 @ 7″	#3 @ 7″					
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
()		5075.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top					
		5988.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.					
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top					
	· ·	6901.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.					
			#3 @ 8.5″	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″					
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#9 top	1-#9 top				
		5752.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.				
			#3 @ 8.5″	#3 @ 8.5″	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top					
		6789.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.					
			#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top						
		7825.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.						
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″						



Lintel Width = 4" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar #3 @ 7" = use one #3 stirrup @ 7" 0/C

Floor Clear	Ground snow	Total Factored Uniform Load	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Snan	hand				carry		Lintel Snan - Fee	t					
feet	nsf	lhs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft		
(10 feet)	30 nsf	150/11	1-#5 top	1-#6 ton	1-#6 top	1-#8 ton	1-#8 top	1-#8 top	1-#9 top	1-#9 ton	1-#9 ton		
(101001)	00 poi	1790 7	1-#5 hot	1-#6 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#8 hot	1-#9 hot	1-#9 hot	1-#9 hot		
		1100.1	#3 @ 8 5"	#3 @ 8 5"	#3@85"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"		
	50 nsf		1-#6 ton	1-#6 ton	1_#8 ton	1-#8 ton	1_#8 ton	1-#9 ton	1_#9 ton	1061	1061		
	00 001	2086.8	1-#6 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#8 hot	1-#9 hot	1-#9 hot				
		2000.0	#2 @ 8 5″	1-#0 D0L #3 @ 8 5″	#3 @ 7″	1-#0 D0L. #3 @ 7″	1-#0 D0L #3 @ 7″	1-#3 D0L #3 @ 7″	1-#3 00L #3 @ 7″				
	70 nef		#3 @ 0.5	#3 @ 0.3	#3 @ 7	#3@7	#3 @ /	#3 @ / 1_#0 top	#3@1				
	70 psi	0000.0	1-#0 t0p	1 #0 top	1 #0 top	1 #0 top	1-#9 top	1 #0 hot					
		2302.9	1°#0 DUL. #2 @ 7″	1=#0 DUL. #2 @ 7″	1=#0 UUL. #0 @ 7″	1°#0 DUL. #2 @ 7″	1=#9 DUL. #2 @ 7″	1*#9 DUL. #0 @ 7″					
(1E feet)	20 nof		#3 @ /	#3 @ /	#3 @ /	#3 @ 7	#3 @ /	#3@7					
(15 leet)	30 psi	0000.0	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#9 top	1-#9 top					
		2300.0	I-#0 DOL.	1-#8 DOL	1-#8 DOL	1-#8 DOL.	1-#9 DOL	1-#9 DOL.					
			#3@7	#3@7	#3@7	#3@7	#3@7	#3@7					
	50 pst		1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top						
		2786.1	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.						
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7"	#3 @ 7″						
	70 psf		1-#8 top	1-#8 top	1-#9 top	1-#9 top							
		3205.6	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.							
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″							
(20 feet)	30 psf		1-#8 top	1-#8 top	1-#9 top	1-#9 top							
		3043.9	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.							
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″							
	50 psf		1-#8 top	1-#9 top	1-#9 top								
		3586.7	1-#8 bot.	1-#9 bot.	1-#9 bot.								
			#3 @ 7″	#3 @ 7″	#3 @ 7"								
	70 psf		1-#9 top	1-#9 top									
		4129.6	1-#9 hot	1-#9 hot									
		112010	#3 @ 7″	#3 @ 7″									
(25 feet)	30 nsf		1-#9 ton	1-#9 ton									
(201001)	00 p31	3705.8	1_#0 hot	1_#0 hot									
		5705.0	1-#3 DUL. #2 @ 7″	1-#3 DUL #2 @ 7″									
	50 pcf		#3 @ /	#3@1									
	50 þSi	4000.0	1-#9 top										
		4303.0	1-#9 DUL.										
	70(#3@7										
	70 psr	5001.0	1-#9 top										
		5021.8	1-#9 DOT.										
(00.6.1)			#3@7										
(30 feet)	30 pst		1-#9 top										
		4608.8	1-#9 bot.										
			#3 @ 7″										
	50 psf												
		5431.3											
	70 psf												
		6253.8											
(35 feet)	30 psf												
		5075.7											
	50 psf												
		5988.6											
	70 psf												
		6901.6											
		000110											
(40 feet)	30 nsf												
(101001)	00 001	5752.0											
		J1J2.J											
	50 nef												
	on hei	6700.0											
		0109.3											
	70 nof												
	i u psi	7005.0											
		1023.0											



Lintel Width = 4" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar #3 @ 7" = use one #3 stirrup @ 7" 0/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet 3 ft 4 ft 5 ft 6 ft 7 ft 8 ft 9 ft 10 ft											
Span	load	Uniform Load													
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft				
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
		1811.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.				
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
		2107.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.				
			no stirrups	no stirrups	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
		2403.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.				
(154.0)	00 <i>(</i>		no stirrups	no stirrups	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"				
(15 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top				
		2387.2	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.				
	50(no stirrups	no stirrups	#3@10.5	#3 @ 10.5	#3 @ 10.5	#3@10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5				
	ou psr	0000 7	1-#0 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#0 top	1-#5 top	1-#6 top				
		2806.7	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#b DOT.				
	70		no stirrups	no stirrups	#3@10.5	#3@10.5	#3@10.5	#3@10.5	#3 @ 10.5	#3 @ 10.5	#3@10.5				
	70 psr	0000 1	1-#0 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#0 top	1-#5 top	1-#6 top				
		3220.1	1-#5 DOL.	1-#0 DOL.	1-#3 DOL.	1-#3 DOL.	1-#0 DOL.	1-#3 DOL.	1-#5 DOL.	1-#3 DOL.	1-#0 DOL.				
(00 feet)	20 pof		no surrups	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5				
(20 leet)	SU þsi	2004 5	1-#0 l0p	1-#0 LUP	1-#5 LUP	1-#5 l0p	1-#0 LUP	1-#0 l0p	1-#0 LUP	1-#0 l0p	1-#0 l0p				
		3064.5	1-#5 DOL.	1-#3 DOL.	1-#3 DOL.	1-#3 DOL.	1-#3 DOL.	1-#3 DOL.	1-#5 DOL.	1-#3 DOL.	1-#0 DOL.				
	EQ pof		no surrups	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5				
	ou hai	2607.2	1-#0 LUP	1-#0 LUP	1-#5 LUP	1-#5 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 l0p	1-#0 LUP				
		3007.3	no stirrups	1-#3 DUL #2 @ 10 5″	1=#3 DUL. #2 @ 10 5″	1=#3 DUL. #2 @ 10 5″	1-#3 DUL. #2 @ 10 5″	1=#3 DUL. #2 @ 10 5″	1-#3 DUL. #2 @ 10 5″	1-#0 DUL. #2 @ 10 5″	1-#0 DUL. #2 @ 0 ⊑″				
	70 nef		1.#5 top	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.5	#3 @ 0.3				
	70 psi	4150.1	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#8 hot				
		4150.1	no stirrups	#2 @ 10 5"	#3 @ 10 5"	#2 @ 10 5"	#2 @ 10 5"	1-#3 000. #3 @ 10 5″	1-#3 000. #3 @ 10 5″	1-#0 D0L. #3 @ 8 5″	1-#0 DUL. #3 @ 8 5″				
(25 feet)	30 nef		1-#5 ton	#3 @ 10.3	#3 @ 10.5	#3 ⊛ 10.5	#3 € 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 0.3	#0 @ 0.0				
(20 1001)	50 psi	3706 /	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot				
		0720.4	no stirruns	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 8 5"	#3@85"				
	50 nsf		1-#5 top	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#6 top	1-#8 ton				
	00 por	4384 4	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	1-#8 hot				
		100111	no stirruns	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10.5"	#3 @ 10 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top				
		5042.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top				
. ,		4629.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.				
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top				
		5451.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
		6274.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top				
		5096.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1 <i>-#</i> 5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
		6009.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
		6922.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top				
		5773.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top					
		6809.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.					
			#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3@10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"					
	/U pst	70.000	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top						
		/846.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.						
			#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"						



Lintel Width = 4" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar #3 @ 8.5" = use #3 stirrup @ 8.5" O/C
Floor Clear	Ground enow	Total Eactored			Minim	um Reinforc	ement for Li	ntels in Load	I Bearing Wa	lls ₄	
Snan	Inad	Uniform I oad			Garry	ing Second S	l intel Span - Fee	tanie + Lign	It Frame Roo	•	
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#8 top
		1811.3	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top
		2107.4	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1 <i>-</i> #8 bot.	1-#9 bot.	1-#9 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top	
		2403.5	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.	
(15 ()	00(#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	
(15 1661)	30 psr	0007.0	1-#0 top	1-#0 top	1-#0 top	1-#8 LOP	1-#8 t0p	1-#8 top	1-#9 top	1-#9 top	
		2301.2	1-#0 JUL #3 @ 10 5″	1-#0 JUL #3 @ 10.5″	1-#0 D0L. #3 @ 10 5″	1°#0 DUL. #2 @ 8 5″	1°#0 DUL. #2 @ 8 5″	1°#0 DUL. #2 @ 8 5″	1*#9 DUL #2 @ 8 5″	1=#9 DUL. #3 @ 8 5″	
	50 nsf		#3 @ 10.5 1-#6 ton	1-#8 ton	#3 @ 10.5	#3 @ 0.5	#3 @ 0.5	#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	
	00 por	2806 7	1-#6 bot	1-#8 hot	1-#8 hot	1-#8 hot	1-#8 hot	1-#9 hot	1-#9 hot		
		2000.1	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top			
		3226.1	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"			
(20 feet)	30 psf		1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top			
		3064.5	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"			
	50 psf		1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top				
		3607.3	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.				
	70(#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	70 pst	4150.4	1-#8 top	1-#8 top	1-#9 top	1-#9 top					
		4150.1	I-#8 DOL. #2 @ 0.5″	I-#δ DOL. #2 @ 0.5″	1-#9 DOL.	1-#9 DOL.					
(25 feet)	30 nef		#3 @ 0.3 1_#8 top	#3 @ 0.3	#3 @ 0.3 1_#0 ton	#3 @ 0.0 1_#0 top					
(25 feet)	50 psi	3726.4	1-#8 hot	1-#8 hot	1-#9 hot	1-#9 top					
		5720.4	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3@85"					
	50 psf		1-#8 top	1-#9 top	1-#9 top	10 8 0.0					
		4384.4	1-#8 bot.	1-#9 bot.	1-#9 bot.						
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"						
	70 psf		1-#8 top	1-#9 top							
		5042.4	1-#8 bot.	1-#9 bot.							
			#3 @ 8.5"	#3 @ 8.5"							
(30 feet)	30 psf		1-#8 top	1-#9 top	1-#9 top						
		4629.4	1-#8 bot.	1-#9 bot.	1-#9 bot.						
	50(#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"						
	ou psr	E4E1 0	1-#9 top	1-#9 top							
		3431.9	1-#9 DUL. #2 @ 0 ⊑″	1-#9 DUL. #2 @ 0 E″							
	70 nsf		#3 @ 0.5	#3 ₩ 0.3							
	10 001	6274.4	1-#9 hot.								
			#3 @ 8.5"								
(35 feet)	30 psf		1-#9 top	1-#9 top							
		5096.2	1-#9 bot.	1-#9 bot.							
			#3 @ 8.5″	#3 @ 8.5"							
	50 psf		1-#9 top								
		6009.2	1-#9 bot.								
	70 (#3 @ 8.5″								
	/U pst	0000.0									
		0922.Z									
(40 feet)	30 nef		1-#0 ton								
(דט וככו)	00 hai	5773 5	1-#9 hot								
		0110.0	#3 @ 8 5"								
	50 psf										
	r.	6809.8									
	70 psf										
		7846.2									



Δ

Lintel Width = 4″ Lintel Depth = 24″ Effective Depth = 21.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar #3 @ 8.5" = use #3 stirrup @ 8.5" 0/C

Floor Clear	Ground snow	Total Factored	Factored Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet									
Span	load	Uniform Load					Lintel Span - Fee	t				
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft	
(10 feet)	30 psf		1#4 top	1#4 top	1#4 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		1784.3	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"		
	50 psf		1#4 top	1#4 top	1#4 top	1-#5 top	1-#5 top	1-#6 top				
		2080.4	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.				
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"				
	70 psf		1#4 top	1#4 top	1#4 top	1-#5 top	1-#6 top					
		2376.5	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"					
(15 feet)	30 psf		1#4 top	1#4 top	1#4 top	1-#5 top	1-#6 top					
		2360.2	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"					
	50 psf		1#4 top	1#4 top	1-#5 top	1-#5 top						
		2779.6	1-#4 bot.	1-#4 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75″	#3 @ 3.75"						
	70 psf		1#4 top	1#4 top	1-#5 top							
		3199.1	1-#4 bot.	1-#4 bot.	1-#5 bot.							
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"							
(20 feet)	30 psf		1#4 top	1#4 top	1-#5 top	1-#5 top						
()		3037.4	1-#4 bot	1-#4 hot	1-#5 hot	1-#5 bot						
		000711	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"						
	50 nsf		1#4 ton	1#4 top	1-#5 top							
	00 poi	3580.3	1-#4 hot	1-#4 hot	1-#5 hot							
		0000.0	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"							
	70 nsf		1#4 ton	1-#5 top	10 8 0.10							
	10 001	4123.1	1-#4 hot	1-#5 hot								
		1120.1	#3 @ 3 75"	#3 @ 3 75"								
(25 feet)	30 nsf		1#4 ton	1-#5 ton	1-#5 ton							
(201001)	00 001	3600 /	1-#4 hot	1-#5 hot	1-#5 hot							
		0000.1	#3 @ 3 75″	#3 @ 3 75″	#3 @ 3 75"							
	50 nsf		1#4 ton	1-#5 ton	10 8 0.10							
	00 001	A357 A	1-#4 hot	1-#5 hot								
		1001.1	#3 @ 3 75"	#3 @ 3 75"								
	70 nsf		1#4 ton	1-#5 ton								
	10 001	5015.3	1-#4 hot	1-#5 hot								
		0010.0	#3 @ 3 75"	#3 @ 3 75"								
(30 feet)	30 nef		1#4 ton	1-#5 ton								
(001001)	00 p31	4602.4	1.#4 bot	1-#5 hot								
		4002.4	#3 @ 3 75"	#3 @ 3 75"								
	50 nsf		1#4 ton	10 8 0.10								
	50 p3i	5424.0	1.#4 bot									
		0121.0	+2 @ 2 75″									
	70 nef		#3 @ 3.75 1#4 ton									
	70 p31	6247.3	1.#4 bot									
		0241.0	+2 @ 2 75″									
(25 feet)	30 nef		#3 @ 3.73	1_#5 top								
(00 1001)	50 psi	5060.2	1.#4 top	1-#5 hot								
		3003.2	1-#4 DUL #2 @ 2 75″	1-#3 D0L #2 @ 2 75″								
	50 pcf		#3 @ 3.73	#J @ J./J								
	50 psi	5002.2	1#4 top									
		J902.2	1°#4 DUL. #0 @ 0.75″									
	70 nof		#3 @ 3.73									
	ro psi	6805 1	1-#5 bot									
		0093.1	1"#3 DUL. #3 @ 0.75″									
(10 fast)	20 nof		#J @ J./J									
(40 1661)	ou psi	E740 F	1#4 top									
		5/40.5	1-#4 DOT.									
	F0(#3@3./5									
	50 pst	0700.0	1-#5 top									
		6/82.8	1-#5 bot.									
	70(#3 @ 3./5									
	/U pst	7819.1										



Lintel Width = 6" Lintel Depth = 10" Effective Depth = 7.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#4 top = top rebar 1-#4 bot.= bottom rebar

#3 @ 3.75" = use #3 stirrup @ 3.5" O/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc	ement for Li	ntels in Load Frame + Ligh	l Bearing Wa It Frame Roo	lls f	
Span	load	Uniform Load			•		Lintel Span - Fee	et			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1#6 top	1#6 top	2-#5 top					
		1800.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1 <i>-</i> #5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"
	50 psf		1-#5 top	1#6 top	2-#5 top						
		2096.3	1-#5 bot.	1-#6 bot.	2-#5 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	
	70 psf		1-#5 top	1#6 top	1#6 top						
		2392.4	1-#5 bot.	1-#6 bot.	1-#6 bot.						
(15.6.3)			#3@4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"		
(15 feet)	30 pst		1-#5 top	1#6 top	1#6 top						
		23/6.1	1-#5 bot.	1-#6 bot.	1-#6 bot.						
	50(#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5		
	ou psr	0705.0	1-#5 top	1-#0 top	1-#5 top	1-#5 top	1-#5 top	1#6 top			
		2795.0	1-#0 DOL.	1-#5 DOL.	1-#3 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.			
	70 pcf		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.5			
	70 psi	2215.0	1 #5 hot	1 #5 bot	1 #5 bot	1 #5 hot	1 #6 hot				
		3213.0	1°#3 DUL. #2 @ 4 ⊑″	1-#J DUL. #2 @ 4 ⊑″	1=#J DUL. #2 @ 4 5″	1°#3 DUL. #2 @ 4 5″	1°#0 DUL. #2 @ 4.5″				
(20 feet)	30 nef		#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3@4.5	#3@4.5				
(201001)	00 p31	3053 4	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1.#6 hot				
		0000.4	#3 @ 4 5"	#3@45"	#3@45"	#3 @ 4 5"	#3 @ 4 5"				
	50 nsf		1-#5 top	1-#5 ton	1-#5 ton	1-#5 top	//0 10 1.0				
	00 por	3596.2	1-#5 bot	1-#5 hot	1-#5 hot	1-#5 bot					
		000012	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
	70 psf		1-#5 top	1-#5 top	1-#5 top						
		4139.0	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top					
		3715.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
	50 psf		1-#5 top	1-#5 top	1-#5 top						
		4373.3	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	70 psf		1-#5 top	1-#5 top	1-#5 top						
		5031.3	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3@4.5"	#3 @ 4.5"	#3 @ 4.5"						
(30 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top						
		4618.3	1-#5 bot.	1-#5 bot.	1-#5 bot.						
	50 auf		#3@4.5	#3 @ 4.5	#3 @ 4.5						
	ou psr	5440.0	1-#5 top	1-#0 top							
		0440.0	1-#0 UUL. #0 @ 4.5"	1-#0 DUL.							
	70 nef		#3 @ 4.3	#3 @ 4.3 1_#5 top							
	10 h2i	6263 3	1-#5 hot	1-#5 hot							
		0200.0	#3 @ 4 5"	#3@45"							
(35 feet)	30 nsf		1-#5 top	1-#5 ton	1-#5 top						
(001000)	00 por	5085 1	1-#5 bot	1-#5 hot	1-#5 hot						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	50 psf		1-#5 top	1-#5 top	100110						
		5998.1	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
	70 psf		1-#5 top								
		6911.1	1-#5 bot.								
			#3 @ 4.5"								
(40 feet)	30 psf		1-#5 top	1-#5 top							
		5762.4	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5″	#3 @ 4.5"							
	50 psf		1-#5 top								
		6798.7	1-#5 bot.								
			#3 @ 4.5"								
	70 psf		1-#5 top								
		7835.1	1-#5 bot.								
			#3 @ 4.5"								



Lintel Width = 6" Lintel Depth = 12" Effective Depth = 9.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load	Lintel Span - Feet										
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft		
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top		
		1832.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		2128.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 6.5"	#3@6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"		
	70 pst	0.004.0	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		2424.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
(15 (+)	00		no stirrups	#3@6.5	#3@6.5	#3@6.5	#3@6.5	#3 @ 6.5	#3@6.5	#3@6.5	#3 @ 6.5		
(15 teet)	30 pst	0407.0	1-#5 TOP	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 TOP	1-#6 top	1-#6 top		
		2407.9	1-#5 DOL	1-#5 DOL.	1-#3 DOL.	1-#3 DOL	1-#5 DOL	1-#0 DOL.	1-#5 DOL	1-#0 DOL.	1-#0 DOL.		
	E0 nof		no surrups	#3 @ 0.0	#3 @ 0.0	#3@0.0	#3 @ 0.0	#3 @ 0.0	#3 @ 0.5	#3 @ 0.0	#3@0.0		
	ou hai	2027 4	1-#3 l0p	1-#0 LUP	1-#5 LUP	1-#5 t0p	1 #5 hot	1-#5 t0p	1-#0 LUP	1-#0 LUP	2-#5 LUP 2 #5 hot		
		2021.4	I-#3 DUL	1-#0 DUL.	1-#0 DOL.	1-#0 DUL.	1-#3 DUL.	1-#3 DUL.	1-#0 UUL. #2 @ 6 E"	1-#0 UUL. #2 @ C E "	2-#0 DUL.		
	70 pef		1.#5 top	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	2=#3 @ 3.3		
	70 µ31	3246.0	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#5 hot		
		3240.5	no etirrune	1-#3 D0L #3 @ 6 5″	1-#J DUL. #3 @ 6 5″	1-#3 D0L. #3 @ 6 5″	1-#3 000. #3 @ 6 5″	1-#0 DOL. #3 @ 6 5″	1-#0 D0L #3 @ 6 5″	2-#3 D01. 2-#3 @ 6 5″	2-#3 @ 5.5"		
(20 feet)	30 nsf		1-#5 ton	#5 @ 0.5	#5 @ 0.5	#3 @ 0.3	#3 @ 0.3	#5 @ 0.5	#3 @ 0.3	2-#5 ton	2-#5 ton		
(201001)	00 p31	3085.2	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2_#5 hot	2.#5 hot		
		0000.2	no stirruns	#3@65"	#3@65"	#3 @ 6 5"	#3 @ 6 5"	#3@65"	#3 @ 6 5"	2#3 @ 6 5"	2 #3 0 5 5"		
	50 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#6 ton	2-#5 ton	1-#8 ton		
	00 por	3628.0	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#8 hot		
		0020.0	no stirruns	#3 @ 6 5"	#3@65″	#3@65"	#3 @ 6.5"	#3 @ 6 5"	#3 @ 6 5"	2-#3@55"	#3 @ 5 5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		4170.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"	#3 @ 5.5"	2-#3 @ 5.5"		
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top		
(,		3747.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.		
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		4405.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	2-#3 @ 5.5"	#3 @ 5.5"	2-#3 @ 5.5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top			
		5063.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"			
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	2-#6 top			
		4650.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#6+1-#5 top				
		5472.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.				
	70(#3 @ 6.5	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	2-#3@5.5"	2-#3 @ 5.5"				
	/U pst	0005 4	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	2-#6 top				
		0295.1	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#5 DOL.	2-#0 DOL.	2-#0 DOL				
(25 feet)	20 pcf		#3 @ 0.0 1_#5 top	#3 @ 0.3	#3 \& 0.0	# 3 ⊌ 0.0 1_#5 ton	∠-#3 @ 0.0 1_#6 top	∠-#3 @ 0.0 2_#5 top	2-#3 @ 0.0	2_#£ top			
(35 leet)	ou hei	5117.0	1 #5 hot	1 #5 bot	1 #5 hot	1 #5 hot	1 #6 hot	2 #5 top	1 #6,1 #5 hot	2=#0 t0p			
		5117.0	1-#3 D0L #3 @ 6 5″	1-#3 D0L #3 @ 6 5″	1-#J DUL. #3 @ 6 5″	#3 @ 6 5″	1-#0 D0L #2 @ 5 5″	2-#3 000. 2-#3 @ 5.5″	1-#0+1-#3 DOL 2_#2 @ 5 5″	2-#0 D0L. 2-#2 @ 5 5″			
	50 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#6 ton	2-#5 ton	2-#6 ton	2 10 6 0.0			
	00 por	6029.9	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#6 hot				
		0020.0	#3 @ 6 5"	#3@65"	#3@65"	#3 @ 6 5"	#3 @ 5 5"	2-#3 @ 5.5"	2-#3@55″				
	70 nsf		1-#5 ton	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2 #0 8 0.0				
		6942.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"					
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	2-#6 top				
. /	· ·	5794.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.				
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#6+1-#5 top					
		6830.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#6 top					
		7866.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.					
			#3 @ 6.5″	#3 @ 6.5″	#3 @ 5.5″	#3 @ 5.5"	2-#3 @ 5.5"	2-#3 @ 5.5"					





Lintel Width = 6" Lintel Depth = 16" Effective Depth = 13.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" O/C

Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Span	load	Uniform Load	10.1	10.7		45.5	Lintel Span - Fee	t	46.5	48.5					
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft				
(TO TEEL)	30 psi	1822.0	1-#0 LUP	2-#5 t0p 2-#5 hot	2-#5 l0p 2-#5 hot	1-#0 LUP	2-#0 l0µ 2-#6 hot	2-#0 l0p 2-#6 hot							
		1032.0	#3@65″	2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"	2-#3 @ 5.5"							
	50 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	2.0000.0	2 #0 0 010							
	·	2128.1	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.									
			2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"									
	70 psf		2-#5 top	1-#8 top	2-#6 top										
		2424.2	2-#5 bot.	1-#8 bot.	2-#6 bot.										
(45 (+++))	00		2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 5.5"										
(15 leel)	30 psi	2407.0	2-#5 LUP 2 #5 hot	1-#0 LUP	2-#0 LUP										
		2407.5	2-#3 @ 6 5"	#3 @ 6 5"	2-#3 @ 5 5"										
	50 psf		1-#8 top	2-#6 top	2.00000										
		2827.4	1-#8 bot.	2-#6 bot.											
			#3 @ 5.5"	2-#3 @ 5.5"											
	70 psf		2-#6 top												
		3246.9	2-#6 bot.												
(00 (+++))	00		2-#3 @ 5.5"	0. //C to a											
(20 leel)	30 psi	2085.2	1-#0 LUP	2-#0 l0µ 2-#6 hot											
		3003.2	#3 @ 5 5″	2-#0 000. 2-#3 @ 5.5″											
	50 psf		2-#6 top	2 //0 (8 0.0											
	·	3628.0	2-#6 bot.												
			2-#3 @ 5.5"												
	70 psf														
		4170.9													
(25 feet)	30 nsf														
(20 1001)	00 poi	3747.1													
	50 psf														
		4405.1													
	70 pcf														
	70 psi	5063.1													
		5005.1													
(30 feet)	30 psf														
		4650.1													
	50 psf	F 170 0													
		5472.6													
	70 nsf														
	10 001	6295.1													
(35 feet)	30 psf														
		5117.0													
	50 auf														
	ou hei	6029.9													
		0020.0													
	70 psf														
		6942.9													
(10.6 . 1)	00 <i>(</i>														
(40 feet)	30 pst	5704.0													
		3794.2													
	50 psf														
		6830.6													
	70 psf	7000.0													
		/866.9													
		r	57			Lintel Width - 6			Lenend						
, 1	75~	\$		75 ″		Lintel Depth = 1 Effective Depth =	6″ = 13.75″		1-#5 top = top r 1-#5 bot.= botto	ebar m rebar					
10	[3. [3.	16	8 1	13.		F'c @ 28 days =	3,000 psi		2-#3 @ 6.5" = u	se two #3 stirrup	s @ 6.5″ O/C				
2						ry = 60,000 psi									
له ا			اله عا	L											
LL 6'	×	Ļ	6″												
10															

 * check applicability limits table A1.3 in appendix A to use this chart

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls ed Carrying Second Storey Wood Frame + Light Frame Roof										
Snan	Inad	Uniform I oad		•									
feet	nsf	lhs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ff		
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top		
(,		1863.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top		
		2160.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top		
		2456.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top		
		2439.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		2859.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top		
		3278.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		3117.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3659.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4202.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 7″		
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3779.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
-			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4436.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5094.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7"		
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4682.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5504.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7"	2-#3@7"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top		
		6326.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
(05.6)			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7"	2-#3@7"	#3 @ 7"		
(35 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5148.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
	50(no stirrups	#3 @ 8.5	#3 @ 8.5	#3@8.5	#3 @ 8.5	#3 @ 8.5	2-#3@7	#3@7	2-#3@7		
	50 psr	0004.0	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	1-#9 top		
		0001.8	1-#3 DOL.	1-#3 DOL.	1-#0 DOL.	1-#3 DOL	1-#0 DOL.	1-#0 DOL.	2-#5 DOL	1-#8 DOL.	1-#9 DOL		
	70 sof		#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3@/	2-#3@/	#3@/	#3@/		
	/u psi	6074 7	1 #5 bot	1 #E bot	1 #E bot	1 #E bot	1-#0 LOP	2-#0 LOP	1 #0 bot	2-#0 LOP			
		09/4./	1*#JUUL. #2@00⊑″	1-#JUUL #2@0⊑″	1"#J DUL. #2 @ 0 5"	1=#J UUL. #2 @ 0 ⊑″	1"#0 UUL. #2 @ 0 E"	∠=#JUUL. 0.#0.@.7″	1"#0 UUL. #0 @ 7"	2"#0 UUL.			
(AD foot)	20 nof		#3 @ 0.0 1_#5 top	#J @ 0.0	#3 @ 0.0	# 3 ⊌ 0.0 1_#5 ton	#0 @ 0.0	2-#3 @ / 1_#6 ton	#3 @ / 2_#5 top	∠-#3 @ / 1_#9 top	2_#£ ton		
(40 1861)	ov hei	5826 1	1-#5 bot	1-#6 bot	1-#5 top	1-#5 hot	1-#0 LUP	1-#6 bot	2=#0 LUP 2_#6 bot	1-#0 LUP	2=#0 LUP 2_#6 hot		
		J020.1	no stirrups	1=#JUUL. #3,@0 ⊑″	1=#3 DUL. #3 @ 0 ⊑″	1=#0 DUL. #2 @ 0 ⊑″	1"#0 UUL. #2 @ 0 ⊑″	1"#0 UUL. #2 @ 7"	2"#J UUL. J_#3 @ 7"	17#0 UUL. #2 @ 7″	2"#0 UUL. 9_#3 @ 7"		
	50 pcf		1.#5 top	#J & 0.J	#0 ⊌ 0.0 1_#5 top	# 3 ⊌ 0.3 1_#5 top	#3 \U 0.3	#3 @ / 2_#5 top	2=#3 ₩ / 1_#8 top	#J @ / 2_#6 top	27#3 18 1		
	υυ μοι	6860 4	1-#5 bot	1-#5 bot	1-#5 hot	1-#5 bot	1_#6 bot	2-#5 hot	1-#0 LUP	2-#0 t0p			
		0002.4	1=#0 DUL. #3 @ 0 ⊑″	1=#JUUL. #3,@0 ⊑″	1=#3 DUL. #3 @ 0 ⊑″	1=#0 DUL. #2 @ 0 ⊑″	1"#0 DUL. #2 @ 7"	∠*#J UUL. J_#3 @ 7″	1"#0 UUL. #2 @ 7"	2-#0 UUL. 2_#2 @ 7"			
	70 nsf		#0 ⊛ 0.0 1_#5 ton	#0 ≪ 0.0 1_#5 ton	#0 ≪ 0.0 1-#5 ton	#0 ≪ 0.0 1-#6 ton	πσ⊛7 1_#6 ton	2-#5 ton	πσ ⊛ / 2-#6 ton	2-#0 € / 1-#8+1-#5 ton			
	10 por	7808 7	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#6 hot	1-#8+1-#5 hot			
		1000.1	#3@85"	#3@85"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 7"	2_#3_@ 7"	2_#3_@ 7"	2-#3 @ 7″			





Lintel Width = 6″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load					Lintel Span - Fee	t					
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft		
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top		
		1863.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top			
		2160.0	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.			
			#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"	#3 @ 7"			
	70 pst		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top				
		2456.1	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.				
456.0	00(#3@8.5	2-#3 @ 8.5	2-#3@8.5	#3 @ 8.5	2-#3@8.5	2-#3@7	#3@7				
(15 teet)	30 pst	0.400.0	1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top				
		2439.8	1-#b DOT.	2-#5 DOT.	2-#5 DOT.	1-#8 DOT.	2-#6 DOT.	2-#6 DOT.	1-#9 DOT.				
	E0 nof		#3@ 8.5	2-#3 @ 8.5	2-#3 @ 8.5	#3 @ 8.5	2-#3@8.5	2-#3@1	#3@7				
	ou hai	2050.2	2=#5 t0p	2=#3 t0p	1 #0 top	2=#0 t0p	1 #0 hot						
		2039.2	2*#3 DUL 0.#2@05″	2=#3 DUL 2 #2 @ 9 5″	1-#0 DUL. #2 @ 0 ⊑″	2-#0 DUL.	1°#9 DUL. #2 @ 7″						
	70 pcf		2=#3 @ 0.3	2*#3 @ 0.3	#3 @ 0.3	2*#3 @ 7	#3@1						
	70 µ31	3078 7	2-#5 hot	1-#8 hot	2-#6 hot	1-#9 top							
		5210.1	2-#3 DUL 2_#3 @ 8 5″	1-#0 D0L #3 @ 7″	2-#0 DUL 2-#3 @ 7"	#2 @ 7"							
(20 feet)	30 nsf		2-#5 ton	#3 ⊚ 7 1_#8 ton	2-#3 ⊚ 7	#3 ⊛ 7 2-#6 ton	1.#9 ton						
(201000)	00 p31	3117.0	2-#5 hot	1-#8 hot	1-#8 hot	2-#6 hot	1-#9 hot						
		0117.0	2-#3@85"	#3 @ 7"	#3 @ 7"	2-#3 @ 7"	#3 @ 7"						
	50 nsf		1-#8 top	2-#6 top	2-#6 top	21001	1001						
	00 por	3659.9	1-#8 bot	2-#6 hot	2-#6 hot								
		0000.0	#3 @ 7"	2-#3@7"	2-#3@7"								
	70 psf		1-#8 top	2-#6 top	21001								
		4202.7	1-#8 bot.	2-#6 bot.									
			#3 @ 7"	2-#3 @ 7"									
(25 feet)	30 psf		1-#8 top	2-#6 top	1-#9 top								
. ,		3779.0	1-#8 bot.	2-#6 bot.	1-#9 bot.								
			#3 @ 7″	2-#3 @ 7"	#3 @ 7″								
	50 psf		2-#6 top	1-#9 top									
		4436.9	2-#6 bot.	1-#9 bot.									
			2-#3 @ 7"	#3 @ 7″									
	70 psf		1-#9 top										
		5094.9	1-#9 bot.										
			#3 @ 7″										
(30 feet)	30 psf		2-#6 top	1-#9 top									
		4682.0	2-#6 bot.	1-#9 bot.									
			2-#3@7"	#3 @ 7″									
	50 pst		1-#9 top										
		5504.5	1-#9 bot.										
	70(#3 @ 7"										
	/U pst	6000.0											
		0320.9											
(25 feet)	30 nef		1_#0 top										
(00 1001)	50 psi	51/8.8	1-#9 top										
		0140.0	#3 @ 7"										
	50 nsf		10 6 1										
	00 por	6061.8											
		000110											
	70 psf												
		6974.7											
(40 feet)	30 psf												
. /		5826.1											
	50 psf												
		6862.4											
	70 psf												
		7898.7											



Lintel Width = 6" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#9 top = top rebar 1-#9 bot.= bottom rebar

1-#9 bot.= bottom rebar 2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

Floor Clear	Ground enow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls ₄			
Snan	load	Uniform Load	Lintel Span - Feet										
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft		
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
· · /		1895.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2191.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2487.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2471.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2891.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3310.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3148.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"		
	50 pst		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3691.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"		
	70 pst	100.1 5	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top		
		4234.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
(05.6))	00(no stirrups	no stirrups	#3@10.5	#3@10.5	#3 @ 10.5	#3@10.5	#3@10.5	#3 @ 10.5	2-#3@10.5		
(25 teet)	30 pst	0040.0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3810.8	1-#6 DOT.	1-#6 DOT.	1-#b DOT.	1-#b DOT.	1-#b DOT.	1-#6 DOT.	1-#b DOT.	1-#b DOT.	1-#b DOT.		
	F0 =={		no stirrups	no stirrups	#3@10.5	#3@10.5	#3 @ 10.5	#3@10.5	#3@10.5	#3@10.5	#3@10.5		
	50 psi	4400.0	1-#0 top	1-#6 LOP	1-#6 top	1-#6 top	1-#0 top	1-#6 top	1-#0 LOP	1-#6 tOp	2-#5 top		
		4408.8	1-#6 DOL.	1-#0 DOL	I-#0 DOL.	I-#0 DOL	1-#0 DOL	I-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#0 DOL		
	70 nof		no surrups	no surrups	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5		
	70 psi	5106 7	1 #6 bot	1 #6 hot	1 #6 hot	2 #5 hot	2=#5 top						
		5120.7	no stirrups	1-#0 DUL #2 @ 10 5″	1°#0 DUL #2 @ 10 5″	1°#0 JUL #2 @ 10 5″	1-#0 JUL #2 @ 10.5″	1°#0 DUL. #2 @ 10.5″	1-#0 DUL #2 @ 10 5″	2"#3 DUL. 0 #2 @ 10 5"	2=#3 DUL 2 #2 @ 0 ⊑″		
(20 feet)	30 nef		1.#6 top	#3 @ 10.3	#3 @ 10.5	#3@10.3	#3@10.3	#3 @ 10.3	#3 @ 10.3	2=#3 @ 10.3	2-#5 top		
(001001)	00 p31	//713.8	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2.#5 hot		
		110.0	no stirruns	no stirruns	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2=#3 @ 10 5"		
	50 nsf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 ton	2-#5 ton	1-#8 top		
	00 por	5536.3	1-#6 hot	1-#6 hot	1-#6 bot	1-#6 bot	1-#6 bot	1-#6 bot	1-#6 hot	2-#5 hot	1-#8 bot		
		0000.0	no stirruns	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10 5"	2-#3 @ 10.5"	#3@85"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	1-#8 top		
		6358.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"		
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top		
		5180.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.		
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top		
		6093.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		7006.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		5857.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		6894.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#8+1-#5 top		
		7930.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		



Lintel Width = $6^{"}$ Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar 2-#3 @ 10.5" = use two #3 stirrups @ 10.5" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc	ement for Li	ntels in Load Frame + Ligh	Bearing Wa	lls f				
Span	load	Uniform Load		Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet 12 ft 13 ft 14 ft 15 ft 16 ft 17 ft 18 ft 19 ft 20 ft 1 #6 trag 1 #6 trag 2 #5 trag 2 #5 trag 1 #6 trag 1 #										
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft			
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top			
		1895.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.			
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"			
	50 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	2-#6 top			
		2191.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.			
	70. pcf		#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3@10.5	2-#3@10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5			
	70 psi	2497.0	1-#0 LUP	1-#0 LUP	2-#0 l0p	2-#5 l0p	1-#0 LUP	1-#0 LUP	2-#0 l0µ	2-#0 LUP	1-#9 t0p			
		2407.5	#3 @ 10 5"	#3 @ 10 5"	2-#3 @ 10 5"	2-#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2-#3 @ 10 5"	2-#0 J0L 2-#3 @ 10 5"	#3 @ 8 5"			
(15 feet)	30 nsf		1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	1-#8 ton	1-#8 ton	2-#6 ton	2-#6 top	1-#9 ton			
(10 1001)	00 001	2471.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.			
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 8.5"			
	50 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top			
		2891.0	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.			
			#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	70 psf		1-#6 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top			
		3310.5	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.			
			#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"			
(20 feet)	30 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top	1-#9 top	1-#8+1-#6 top	2-#8 top			
		3148.8	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.			
	50 auf		#3 @ 10.5	2-#3@10.5	2-#3@10.5	#3 @ 10.5	2-#3@8.5	#3 @ 8.5	#3 @ 8.5	2-#3 @ 8.5	2-#3@8.5			
	ou hei	2601 7	2-#3 l0p	2-#0 l0p	1-#0 LUP	2-#0 l0µ	1-#9 top	1 #0.1 #6 bot	2-#0 LUP	2-#0 LUP				
		3091.7	2=#3 JUL 2_#3 @ 10.5″	2-#3 DUL 2_#3 @ 10.5″	1=#0 DUL. #3 @ 10 5″	2=#0 DUL. 2_#2 @ 8.5"	1-#9 DUL. #3 @ 8 5″	1=#0+1=#0 JUL 2_#2 @ 8 5″	2*#0 DUL 2_#2 @ 8.5″	2*#0 JUL 2_#3 @ 8 5″				
	70 nsf		2-#5 ton	2-#3 @ 10.5	2-#6 ton	2-#3 @ 0.3	1-#8+1-#6 ton	2-#8 ton	2-#3 @ 0.3	2-#3 @ 0.3				
	10 001	4234.5	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.						
			2-#3 @ 10.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						
(25 feet)	30 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top					
. ,		3810.8	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.					
			2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
	50 psf		1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top						
		4468.8	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.						
			#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						
	70 psf		1-#8 top	2-#6 top	1-#9 top	2-#8 top	2-#8 top							
		5126.7	1-#8 bot.	2-#6 bot.	1-#9 bot.	2-#8 bot.	2-#8 bot.							
(20 faat)	20 pcf		#3 @ 8.5	2-#3 @ 8.5	#3 @ 8.5	2-#3@ 8.0	2-#3 @ 8.5							
(SU leet)	30 þSi	4713.8	1-#8 hot	2=#0 top 2=#6 hot	1-#9 top 1_#9 hot	1-#8+1-#6 hot	2=#0 top 2=#8 hot							
		110.0	#3 @ 8 5"	2-#3@85"	#3@85"	2-#3 @ 8 5"	2-#3@85"							
	50 psf		2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2 20 0 0.0							
		5536.3	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.								
			2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"								
	70 psf		1-#9 top	1-#8+1-#6 top	2-#8 top									
		6358.7	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.									
			#3 @ 8.5″	2-#3 @ 8.5"	2-#3 @ 8.5"									
(35 feet)	30 psf		1-#8 top	2-#6 top	1-#9 top	2-#8 top	2-#8 top							
		5180.6	1-#8 bot.	2-#6 bot.	1-#9 bot.	2-#8 bot.	2-#8 bot.							
	E0 pof		#3@8.5	2-#3@8.5	#3 @ 8.5	2-#3@8.5	2-#3@8.5							
	ou hei	6003.6	2-#0 l0p 2-#6 hot	1-#9 t0p	2-#0 l0µ 2-#8 hot	2-#0 lUp 2-#8 hot								
		0033.0	2-#0 D0L 2-#3 @ 8 5″	#3@85"	2-#3 @ 8 5"	2-#3 @ 8 5"								
	70 nsf		1-#8+1-#5 top	2-#8 ton	2 // 0 @ 0.0	2 // 0 @ 0.0								
	10 001	7006.5	1-#8+1-#5 bot.	2-#8 bot.										
			2-#3 @ 8.5"	2-#3 @ 8.5"										
(40 feet)	30 psf		2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top								
		5857.9	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.								
			2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"								
	50 psf		1-#8+1-#5 top	2-#8 top	2-#8 top									
		6894.2	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.									
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"									
	70 psf	7000 5	1-#8+1-#6 top	2-#8 top										
		7930.5	1-#8+1-#6 bot.	2-#8 bot.										
			2-#3@8.5	2-#3@8.5										



Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar

2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C

Lintel Width = 6" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi



	Owners of a second	Total Fastered			Minim	um Reinfor	cement for	Lintels in L	oad Bearing	Walls		
Floor Clear	Ground snow	Iotal Factored			Carry	ing Second	Storey Woo	od Frame + I	Light Frame	Walls 111 ft 2+5 top 1+78 top 2+5 tot 1+78 top 2+5 tot 1+78 top 1+78 top 2+75 top 1+78 top 1 1-78 top 1		
Spail feet	nef	lhe/ft	3 ft	A ft	5 ft	6 ft	7 ft	8 ft	Q ft	10 #	11 #	12 #
(10 feet)	30 nsf	103/11	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 top	1-#6 ton	2-#5 ton	1-#8 ton	2-#6 ton
(101000)	00 po.	1873.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	
		2189.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75″	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		2505.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"		
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		2476.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		2924.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3@3.75"	#3 @ 3.75"	#3 @ 3.75"	#3@3.75"	#3@3.75"	2-#3@3.75"				
	70 pst		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top					
		3371.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.					
(00.6))	00(#3@3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	0.45.1				
(20 teet)	30 pst	0400.0	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top				
		3186.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.				
	50 mm		#3@3./5	#3@3./5	#3@3./5	#3@3.75	#3@3.75	2-#3@3.75				
	ou psi	0765.0	1-#5 t0p	1-#5 t0p	1-#5 top	1-#0 top						
		3/03.2	1-#0 DUL. #0 @ 0 75″	1-#3 DUL. #3 @ 3 75"	1-#3 DOL. #2 @ 2 75"	1-#0 DUL.						
	70 nef		#3@3./3 1_#5 ton	#3@ 3.75 1_#5 top	#3@3.75 1_#5 ton	#3@3./3						
	70 psi	1311.2	1-#5 top	1-#5 top	1-#5 top	1-#6 hot						
		4044.2	1-#3 DUL. #2 @ 3 75″	1-#3 b0t. #3 @ 3 75″	1-#3 b0t. #3 @ 3 75″	1-#0 D0L. #3 @ 3 75″						
(25 feet)	30 nef		#3 ⊛ 3.75 1-#5 ton	#3 @ 3.75 1-#5 ton	#3 @ 3.75	#3 @ 3.75 1_#6 ton						
(201001)	00 p31	3879 5	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot						
	50 psf	0010.0	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3@375"						
	50 psf		1-#5 top	1-#5 top	1-#5 top	1000000						
		4581.4	1-#5 bot.	1-#5 bot.	1-#5 bot.							
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"							
	70 psf		1-#5 top	1-#5 top	1-#6 top							
		5283.2	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"							
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top							
		4825.4	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"							
	50 psf		1-#5 top	1-#5 top								
		5702.7	1-#5 bot.	1-#5 bot.								
			#3 @ 3.75"	#3 @ 3.75"								
	/U pst	0500.0	1-#5 top	1-#5 top								
		6580.0	1-#5 bot.	1-#5 bot.								
(05 4+)	20		#3@3.75"	#3 @ 3.75"	1 #0 +							
(JD TEEL)	30 pst	5014 4	1 #5 bot	1 #5 bot	1 #6 bot							
		JJ14.4	1*#JUUL. #2@275″	1"#JUUL. #3@37⊑″	1"#0 DUL. #3 @ 3 7⊑″							
	50 nef		#3@3./3 1_#5 ton	#3@ 3.75 1_#5 top	#3@ 3.75							
	50 psi	6288.2	1-#5 hot	1-#5 hot								
		0200.2	#3 @ 3 75"	#3 @ 3 75"								
	70 nsf		1-#5 ton	1-#5 ton								
	por	7262.0	1-#5 bot.	1-#5 bot.								
			#3 @ 3.75"	#3 @ 3.75"								
(40 feet)	30 psf		1-#5 top	1-#5 top								
. /		6023.7	1-#5 bot.	1-#5 bot.								
			#3 @ 3.75″	#3 @ 3.75″								
	50 psf		1-#5 top	1-#5 top								
		7129.2	1-#5 bot.	1-#5 bot.								
			#3 @ 3.75"	#3 @ 3.75"								
	70 psf		1-#5 top	1-#6 top								
		8234.6	1-#5 bot.	1-#6 bot.								
			#3 @ 3.75″	#3 @ 3.75″								



Lintel Width = 8" Lintel Depth = 10" Effective Depth = 7.6" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 3.75" = use two #3 stirrups @ 3.75" O/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc na Second S	ement for Li torev Wood I	ntels in Load Frame + Ligh	Bearing Wal	lls f	
Span	load	Uniform Load			•••••		Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top
		1894.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top
		2209.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		2525.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		2497.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	
		2944.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	
			#3 @ 4.5"	#3 @ 4.5	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	
	70 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3392.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
(00.6))	00(#3@4.5	#3 @ 4.5	#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#3 @ 4.5		
(20 teet)	30 pst	0000.0	1-#5 top	1-#5 TOP	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3206.6	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#6 DOT.	1-#6 DOT.	2-#5 DOT.		
	E0 pof		#3@4.5	#3 @ 4.5	#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#3 @ 4.5		
	ou hai	0705 C	1-#0 l0p	1-#0 LUP	1-#0 l0p	1-#5 LUP	1-#0 LUP	2-#0 l0p			
		3/03.0	1-#3 DUL. #3 @ 4 E"	1-#5 DUL. #2 @ 4 E"	1-#3 DUL. #2 @ 4 E"	1-#0 DOL.	1-#0 DUL.	2-#0 DUL.			
	70 nef		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	2-#3 @ 4.5			
	70 psi	1261 6	1 #5 hot	1 #5 bot	1 #5 bot	1-#0 t0p	1 #6 hot				
		4304.0	1°#3 DUL. #2 @ 4 ⊑″	1-#3 DUL. #2 @ 4 ⊑″	1-#3 DUL. #2 @ 4 ⊑″	1=#0 DUL. #2 @ 4 5″	1-#0 DUL. #2 @ 4 5″				
(25 feet)	30 nef		#3 © 4.3	#5 @ 4.5	#0 @ 4.0	#5 @ 4.5	#0 @ 4.0	2-#5 ton			
(25 leet)	00 p31	3800.0	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot			
		3033.3	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	2-#3 @ 4 5"			
	50 nsf		1-#5 top	1-#5 top	1-#5 top	1-#6 ton	2-#5 ton	2 // 0 10 1.0			
	00 por	4601.8	1-#5 bot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot				
		100110	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	2-#3@45"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		5303.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		4845.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
	50 psf		1-#5 top	1-#5 top	1-#5 top						
		5723.1	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	70 psf		1-#5 top	1-#5 top	1-#5 top						
		6600.4	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		5334.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
	50(#3@4.5	#3 @ 4.5	#3@4.5	#3 @ 4.5					
	50 pst	0000 5	1-#5 top	1-#5 TOP	1-#6 top						
		0308.0	1-#5 DOL.	1-#5 DOL.	I-#0 DOL.						
	70 pof		#3@4.5	#3 @ 4.5	#3 @ 4.5						
	ro psi	7090 4	1-#5 bot	1-#3 tup 1_#5 bot	1-#6 bot						
		1202.4	1=#0 UUL. #3 @ / ⊑″	1*#JUUL. #2 @ / ⊑″	1"#0 UUL. #3 @ / ⊑″						
(40 feet)	30 nef		#J ⊌ 4.J 1-#5 ton	#0 ⊌ 4.0 1-#5 ton	#0 ⊌ 4.0 1-#β ton						
(40 1001)	00 hai	6044.1	1-#5 hot	1-#5 hot	1-#6 hot						
		0044.1	1-#3 DUL #3 @ / 5″	#3 @ / 5"	1-#0 DUL. #3 @ / 5″						
	50 nsf		#0 ⊛ 4.0 1-#5 ton	1-#5 ton	//∪ ≪ H.J						
	00 poi	7149.5	1-#5 hot	1-#5 hot							
			#3 @ 4 5"	#3 @ 4 5"							
	70 psf		1-#5 top	1-#5 top							
	P	8255.0	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							



Lintel Width = 8" Lintel Depth = 12" Effective Depth = 9.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof											
Span	load	Uniform Load			Garry	ng second s	Lintel Span - Fee	tanie + Lign		•				
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft			
(10 feet)	30 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top					20 11			
(• • • •)		1894.0	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.								
			2-#3@4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"								
	50 psf		1-#8 top	2-#6 top										
		2209.9	1-#8 bot.	2-#6 bot.										
			#3 @ 4.5"	2-#3 @ 4.5"										
	70 psf		2-#6 top											
		2525.7	2-#6 bot.											
			2-#3@4.5″											
(15 feet)	30 psf		2-#6 top											
. ,		2497.2	2-#6 bot.											
			2-#3 @ 4.5"											
	50 psf													
		2944.6												
	70 psf													
		3392.0												
(20 feet)	30 psf													
		3206.6												
	50 psf													
		3785.6												
	70 pst													
		4364.6												
(05 (+++)	00													
(20 leet)	30 psi	2000.0												
		2099.9												
	50 pcf													
	50 p31	/601.8												
		4001.0												
	70 psf													
		5303.6												
(30 feet)	30 psf													
		4845.8												
	50 psf													
		5723.1												
	70 psf													
		6600.4												
(35 feet)	30 psf													
		5334.7												
	50 pst													
		6308.5												
	70													
	70 psr	7000 4												
		7282.4												
(AD foot)	30 nef													
(40 1661)	00 h21	6044.1												
		00-14.1												
	50 nef													
	00 hai	7149 5												
		1110.0												
	70 psf													
		8255.0												



Lintel Width = 8″ Lintel Depth = 12″ Effective Depth = 9.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Snan - Fert								
Span	load	Uniform Load					Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top
		1934.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"
	50 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		2250.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.
	70		no stirrups	no stirrups	no stirrups	#3 @ 6.5	#3 @ 6.5	#3@6.5	#3@6.5	#3@6.5	#3@6.5
	70 pst	0500.5	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		2566.5	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#b DOT.	1-#6 DOT.
(15 C)	00(no stirrups	no stirrups	#3 @ 6.5	#3@6.5	#3 @ 6.5	#3@6.5	#3@6.5	#3@6.5	#3@6.5
(15 feet)	30 pst	0507.0	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		2537.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.
	50(no stirrups	no stirrups	#3 @ 6.5	#3@6.5	#3@6.5	#3@6.5	#3@6.5	#3@6.5	#3@6.5
	50 pst	0005.4	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top
		2985.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
	70 (no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5	#3 @ 6.5	#3 @ 6.5"	2-#3 @ 6.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		3432.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top
		3247.3	1-#5 bot.	1 <i>-</i> #5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		3826.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	
		4405.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top
		3940.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		4642.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		5344.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"			
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top		
		4886.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.		
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		5763.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		6641.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"				
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		5375.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
		6349.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		7323.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5″					
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
		6084.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		7190.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		8295.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"					





8″

Lintel Width = 8″ Lintel Depth = 16″mm) Effective Depth = 13.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" O/C

Floor Clear Snan	Ground snow	Total Factored		Minimum Reinforcument for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet Lintel Span - Feet t 18 ft 19 ft 20 ft t 17 ft 18 ft 19 ft 2 ft t 1 ft 1 ft 1 ft 2 ft t 1 ft 1 ft 1 ft 2 ft <th col<="" th=""></th>											
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft				
(10 feet)	30 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1#8+1-#5 top	2-#8 top	2-#8 top				
. ,		1934.8	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.				
			#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"				
	50 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1#8+1-#5 top	2-#8 top	2-#8 top					
		2250.6	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.					
			2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"					
	70 psf		2-#5 top	1-#8 top	2-#6 top	2-#6 top	1#8+1-#5 top								
		2566.5	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.								
			2-#3@6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"								
(15 feet)	30 pst		2-#5 top	1-#8 top	2-#6 top	2-#6 top	1#8+1-#5 top								
		2537.9	2-#5 DOT.	1-#8 DOT.	2-#6 DOT.	2-#6 DOT.	1-#8+1-#5 DOT.								
	E0 pof		2-#3 @ 0.0	#3 @ 0.5	2-#3@0.0	2-#3 @ 0.0	2-#3 @ 0.5								
	50 hsi	2005 4	1 #0 top	2=#0 t0p	1 #0 hot										
		2903.4	1=#0 DUL. #3 @ 6 5″	2-#0 JUL 2-#3 @ 6 5″	1=#9 DUL. #3 @ 6.5″										
	70 nsf		#3 @ 0.5	2-#6 ton	#3 @ 0.3										
	10 001	3432 8	1-#8 hot	2-#6 hot											
			#3 @ 6.5"	2-#3 @ 6.5"											
(20 feet)	30 psf		1-#8 top	2-#6 top											
. ,	·	3247.3	1-#8 bot.	2-#6 bot.											
			#3 @ 6.5"	2-#3 @ 6.5"											
	50 psf														
		3826.3													
	70 psf	4405.4													
		4405.4													
(25 feet)	30 nef														
(201000)	00 por	3940 7													
		001011													
	50 psf														
		4642.5													
	70 psf														
		5344.4													
(0.0.())															
(30 teet)	30 pst	400C E													
		4000.J													
	50 nsf														
	00 por	5763.8													
	70 psf														
		6641.1													
(35 feet)	30 psf														
		5375.5													
	50 psf														
		6349.3													
	70 nef														
	70 psi	7323 1													
		1020.1													
(40 feet)	30 psf														
· /	·	6084.9													
	50 psf														
		7190.3													
	70 psf	0005 7													
		8292. <i>1</i>													
						Lintel Width = 8	í″		Legend						
				1 .		Lintel Depth = 1	6″mm)		1-#5 top = top r	ebar					
. 8	പ് 🚰	\$	8	<u>م</u>		Effective Depth	= 13.5″		1-#5 bot.= botto	m rebar					
10	13	, 16	위 😣	13.		F'c @ 28 days =	3,000 psi		2-#3 @ 6.5" = u	se two #3 stirrup	os @ 6.5″ O/C				

13 8″ 8

F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Floor Clear	Ground enow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls f	
Snan	Inad	Uniform I oad			Carry	ng second s	l intel Span - Fee	t Eight		•	
feet	nsf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
(,		1975.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2291.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5″
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2607.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5″
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2578.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3026.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3473.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3288.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3867.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		4446.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
(05 (cot))	00		no stirrups	no stirrups	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	2-#3 @ 8.5	2-#3@8.5
(25 teet)	30 psr	0001.4	1-#0 top	1-#0 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#0 top	1-#6 top	2-#5 top
		3981.4	1-#6 DOL	1-#6 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#6 DOL.	I-#0 DOL.	2-#5 DOL.
	50 pcf		1 #6 top	1 #6 top	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	2-#3 @ 8.5
	ou hai	1602.0	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	2-#3 l0p	1-#0 LUP
		4003.3	no stirruns	no stirrups	1=#0 DUL. #2 @ 0 ⊑″	1=#0 DUL. #2 @ 0 ⊑″	1°#0 DUL. #2 @ 0 ⊑″	1=#0 DUL. #2 @ 0 ⊑″	1-#0 DUL. #2 @ 0 ⊑″	2=#3 DUL. 2 #2 @ 9 5″	1-#0 DUL. #2 @ 0 ⊑″
	70 nef		1-#6 ton	1-#6 ton	#3@0.5	#3@0.3 1-#6 ton	#3@0.5	#3@0.5	#3@0.5 2-#5 ton	2=#3 @ 0.3	#3@0.5
	70 p31	5385 1	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2_#5 hot	2-#5 hot	1-#8 hot
		0000.1	no stirruns	#3 @ 8 5"	#3@85"	#3@85"	#3@85"	#3@85"	2-#3@85"	2-#3@85"	#3 @ 8 5"
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
(******)		4927.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1#6+1-#5 top	2-#6 top
		5804.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	1-#9 top
		6681.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#9 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 7″	#3 @ 7″
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1#6+1-#5 top	1-#8 top
		5416.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 7″
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		6390.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	#3 @ 7"	2-#3@7"
	/U pst	7000 0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#8+1-#5 top
		/363.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.
(40.5)	00(no stirrups	#3 @ 8.5"	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5"	2-#3@8.5	#3@7"	2-#3 @ 7"	2-#3@7"
(40 feet)	30 pst	0105.0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		0125.0	I-#0 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOT. #0 @ 0 5 "	1-#0 DOL.	I-#0 DOI.	2-#0 DOL	I-#ŏ DOĽ. #2 ⊜ 7″	2-#0 DOI.
	E0 not		1 #6 top	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	2-#3@8.5	#3@/	2-#3@/
	ou hai	7021.0	1-#6 bot	1-#0 LUP	1-#0 LUP	1-#6 bot	1-#6 bot	2=#0 LUP 2_#5 hot	1-#0 LUP	2=#0 LUP 2_#6 bot	1-#0+1-#0 LUP 1_#8+1.#5 bot
		1201.0	no etirrupe	1*#0 DUL #2 @ 8 5″	1*#0 DUL. #3 @ 8 5″	1*#0 DUL. #3 @ 8 5″	1°#0 DUL #2 @ 8 5″	2-#3 DUL. 2-#3 @ 8 F"	#3 @ 7"	2*#0 JUL 2_#2 @ 7″	1-#0+1*#3 UUL 2_#2 @ 7″
	70 nef		1-#6 ton	#0 ⊌ 0.0 1-#6 ton	#0 ≪ 0.0 1-#6 ton	#0 ≪ 0.0 1-#β ton	#0 ≪ 0.0 1-#6 ton	2-#5 ton	πσ≪1 2-#6 ton	2-#0 € / 1-#8±1-#5 ton	2-#3 € 1 2-#8 ton
	10 pai	8336.5	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#6 hot	1-#8+1-#5 hot	2-#8 hot
		0000.0	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7"





Lintel Width = 8" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C"

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc	ement for Li	ntels in Load	Bearing Wal	lls f	
Span	load	Uniform Load			oury.		Lintel Span - Fee	t time t might		•	
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top
		1975.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top
		2291.4	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top
		2607.2	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.
(1E faat)	20 pof		#3@8.5	2-#3@8.5	2-#3@8.5	#3 @ 8.5	2-#3@8.5	2-#3 @ 8.5	2-#3 @ 8.5	2-#3@8.5	2-#3@8.5
(15 leet)	30 psi	2570 7	1-#0 LUP	2-#0 l0p	2-#5 t0p	1-#0 LUP	1-#0 LUP	2-#0 l0p	1 #0+1 #5 hot	1 #0+1-#0 LUP	1 #0+1 #6 hot
		2010.1	#3 @ 8 5"	2-#3 @ 8 5"	2-#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	2-#0 000. 2-#3 @ 8.5"	2_#3 @ 8 5″	2-#3 @ 8 5″	2-#3 @ 8 5″
	50 nsf		#3 @ 0.5	2-#5 ton	2-#3 ⊛ 0.5	2-#6 ton	2-#6 ton	2-#3 @ 0.5	2-#3 @ 0.5	2-#3 @ 0.5	2-#3 @ 0.5
	00 por	3026 1	2-#5 hot	2-#5 hot	1-#8 hot	2-#6 hot	2-#6 hot	1-#8+1-#5 bot	1-#8+1-#6 bot	2-#8 hot	1-#9+1-#8 bot
		002011	2-#3@8.5"	2-#3@8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3@7"	2-#3@7"
	70 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top
	·	3473.5	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.
			2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″
(20 feet)	30 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top
		3288.1	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.
			2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7″	2-#3 @ 7"	2-#3 @ 7"	2-#3@7″
	50 psf		1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top	
		3867.1	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	
	70 psf		1-#8 top	2-#6 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top		
		4446.1	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
(05 (+++))	00		#3@8.5	2-#3@8.5	2-#3@7	2-#3@7	2-#3@7	2-#3@7	2-#3@/	0.00444	
(25 1661)	30 psr	2001.4	1-#8 top	2-#0 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	
		3901.4	1-#0 UUL. #2 @ 0 ⊑″	2-#0 UUL.	1-#9 DOL. #2 @ 0 5″	1-#0+1-#0 UUL. 0 #2 @ 7"	2-#0 UUL. 2 #2 @ 7″	2-#0 UUL. 0 #2 @ 7″	1-#9+1-#0 UUL. 0 #2 @ 7″	2-#9 DUL. 0 #2 @ 7″	
	50 nsf		#3 @ 0.5	2-#3 @ 0.5	#3 @ 0.5 1-#8±1-#6 ton	2-#8 ton	2-#3 ⊛7 1-#9±1-#8 ton	2-#3 @ 7 1-#9±1-#8 ton	2-#3 @ 1	2-#3 @ 1	
	50 p31	4683.3	2-#6 hot	1-#9 hot	1-#8±1-#6 hot	2-#8 hot	1-#9±1-#8 hot	1-#9+1-#8 hot			
		1000.0	2-#3@85"	#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
	70 psf		2-#6 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top	21001			
		5385.1	2-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
(30 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		4927.3	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
	50 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		5804.6	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3@7"	2-#3@7"	2-#3@7"	2-#3@7"	2-#3 @ 7"				
	/U pst	0001.0	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		6691.8	1-#ö+1-#ö bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
(25 foot)	20 pcf		2-#3@/	2-#3@/	2-#3@7	2-#3@7	2 #0 top				
(00 1001)	90 h91	5416.2	1-#8±1-#5 hot	1-#8±1-#6 hot	2-#0 tup 2-#8 hot	1-#9±1-#8 hot	2-#3 tup 2-#0 hnt				
		J410.2	2_#3 @ 7″	2-#3 @ 7″	2-#0 DOL. 2-#3 @ 7"	2-#3 @ 7″	2-#3 001. 2-#3 @ 7"				
	50 nsf		1-#8+1-#6 top	2-#8 ton	1-#9+1-#8 ton	2-#9 ton	21081				
	00 poi	6390.1	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 hot.					
			2-#3@7″	2-#3 @ 7"	2-#3@7″	2-#3 @ 7"					
	70 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
	·	7363.9	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7″						
(40 feet)	30 psf		1-#8+1-#5 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		6125.6	1-#8+1-#5 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″					
	50 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
		7231.0	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"						
	70 psf	0057-7	2-#9 top	2-#9 top							
		8336.5	2-#9 bot.	2-#9 bot.							
			2-#3 @ 7″	2-#3 @ 7"							



Lintel Width = 8″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C"

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc	ement for Li Storey Wood	ntels in Load Frame + Ligh	l Bearing Wa t Frame Roo	lls f	
Span	load	Uniform Load					Lintel Span - Fee	et			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2016.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2332.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2648.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2619.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3066.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3514.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3328.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3907.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4486.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
(25 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
. ,		4022.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4724.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		5425.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4968.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		5845.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top
		6722.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		5457.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top
		6430.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		7404.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		6166.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		7271.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	2-#6 top	1-#8+1-#5 top
		8377.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10.5"	2-#3@105"	2-#3 @ 10.5"	2-#3@85"	2-#3@85"



Lintel Width = 8" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

Floor Clear	Ground snow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wal	ls		
Span	load	Uniform Load	Carrying Second Storey Wood Frame + Light Frame Roof Lintel Span - Feet 12 ft 13 ft 14 ft 15 ft 16 ft 17 ft 18 ft 19 ft 20 ft									
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft	
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	
		2016.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	2-#6 top	
		2332.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	
	70 pof		#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	
	70 psr	0649.0	1-#0 top	1-#0 top	2-#5 top	2-#5 t0p	1-#8 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#3 LOP	
		2040.0	1-#0 UUL. #3 @ 10 5"	1-#0 UUL. #3 @ 10.5″	2-#3 DUL. 2_#3 @ 10.5″	2-#3 DUL. 2_#3 @ 10.5"	1-#0 UUL. #3 @ 10 5″	1-#0 UUL. #3 @ 10 5"	2-#0 UUL. 2_#2 @ 10 5″	2-#0 JUL. 2_#3 @ 10.5″	1-#0+1-#0 DUL 2_#2 @ 10.5"	
(15 feet)	30 nsf		#3@10.5	#3 @ 10.5	2-#5 ton	2-#5 ton	#3@10.5	#3@10.5	2-#6 ton	2-#6 ton	2-#3 @ 10.5 1-#8±1-#5 ton	
(10 1001)	00 poi	2619.4	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	
			#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	50 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#5 top	1-#8+1-#6 top	
		3066.9	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	
			#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	70 psf		1-#6 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top	
		3514.3	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	
			#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	
(20 feet)	30 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#6 top	1-#8+1-#6 top	2-#8 top	
		3328.8	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	
	50 auf		#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	2-#3 @ 10.5	2-#3@10.5	
	ou psr	2007.9	2-#5 t0p	2-#0 t0p	1-#8 t0p	2-#0 t0p	1-#9 t0p	1-#8+1-#6 LOP	2-#8 t0p	2-#8 t0p	1-#9+1-#8 top	
		3907.0	2=#3 JUL. 2=#3 @ 10 5"	2-#3 DUL 2-#3 @ 10 5"	#3 @ 10 5"	2=#0 JUL 2=#3 @ 10 5"	1-#9 DUL #3 @ 10 5″	2_#3 @ 10 5"	2=#0 JUL 2=#3 @ 10 5"	2=#0 JUL 2=#3 @ 8 5″	2-#3 @ 8 5″	
	70 nsf		2-#5 ton	1-#8 ton	2-#6 ton	2-#3 @ 10.5	1-#8+1-#6 top	2-#8 ton	2-#8 ton	1-#9+1-#8 ton	2-#9 ton	
	10 001	4486.9	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
(25 feet)	30 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	
		4022.2	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	
			2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	50 psf		1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top	
		4724.0	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			#3 @ 10.5"	#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	70 psf	- 105 A	1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top		
		5425.9	1-#8 DOL	2-#6 DOT.	1-#8+1-#5 DOL	1-#8+1-#6 DOT.	2-#8 DOT.	1-#9+1-#8 DOL	1-#9+1-#8 DOL	2-#9 DOT.		
(30 feet)	30 nef		#3 @ 10.5	2-#3 @ 10.3	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0 2-#8 top	2-#3 @ 0.3	2-#3 @ 0.3		
(50 1661)	50 psi	4968.0	1-#8 hot	2-#6 hot	2-#6 hot	1-#8+1-#5 hot	2-#8 hot	2-#0 top 2-#8 hot	1-#0+1-#8 hot	2-#9 top 2-#9 hot		
		4000.0	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@85"	2-#3@85"	2-#3@8.5"	2-#3@85"	2-#3 @ 8.5"		
	50 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2 #0 0 0.0		
	·	5845.3	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	70 psf		2-#6 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		6722.7	2-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
(35 feet)	30 psf		1-#8 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		5457.0	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
	E0 pof		#3 @ 10.5	2-#3@10.5	2-#3@8.5	2-#3@8.5	2-#3 @ 8.5	2-#3 @ 8.5	2-#3 @ 8.5			
	ou hei	8 0513	2-#0 l0p 2-#6 hot	1-#0+1-#5 LUP	1-#0+1-#0 LUP	2-#0 lUµ 2-#8 hot	1-#9+1-#0 LUP	2-#9 l0p 2-#9 hot				
		0400.0	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"				
	70 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2 10 8 0.0				
		7404.6	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
(40 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		6166.4	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
	50 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		7271.8	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
	70		2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"					
	/U pst	0077.0	1 #0,1 #0 hot	2-#ö top 0 #0 hot	1-#9+1-#8 TOP	2-#9 top						
		03/1.Z	1=#0+1=#0 DUĹ. 0_#3 @ 0 ⊑‴	∠=#0 DUL 2_#3 @ 0 ⊑″	ו־#ט+ו-#ŏDUĹ 	∠-#9 DOL. ೨_#3 @ 0 ⊑″						
			2-#J @ 0.J	L-#0 @ 0.0	∠-#J \ 0.J	∠-#J @ 0.J						



Lintel Width = 8" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc ing Second S	ement for Li torev Wood I	ntels in Load Frame + Ligh	Bearing Wa t Frame Roo	lls f	
Span	load	Uniform Load					Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1# 8 top
		1899.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1# 8 top
		2215.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1# 8 top	2-#6 top
		2530.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			#3 @ 3.75"	#3 @ 3.75"	#3@3.75"	#3@3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3@3.75"	#3 @ 3.75"	2-#3@3.75"
(15 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1# 8 top	2-#6 top
		2502.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
	50 auf		#3@3./5	#3@3./5	#3@3./5	#3@3./5	#3@3./5	#3@3./5	2-#3@3.75	#3@3./5	2-#3@3.75
	50 psr	0040.7	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#0 top	2-#5 top	1# 8 top	2-#6 top	
		2949.7	1-#3 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#5 DOL	1-#δ DOL.	2-#0 DOL	
	70 nof		#3@3./5	#3 @ 3./5	#3 @ 3.75	#3@ 3./5	#3 @ 3./5	2-#3@3.75	#3 @ 3.75	2-#3@3.75	
	70 psi	2207.1	1-#0 l0p	1-#0 LUP	1-#0 LUP	1-#5 l0p	1-#0 LUP	2-#0 l0p	2-#0 l0p		
		3397.1	1-#3 DUL. #3 @ 3 75″	1-#0 DUL.	1-#0 DOL.	1-#0 DUL. #0 @ 0.75″	1-#0 UUL. #2 @ 0.75"	2-#0 DUL.	2-#0 UUL.		
(20 feet)	30 nef		#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	2-#3@ 3.13 2-#5 top	2=#3@3.73 2=#6 ton		
(201661)	50 psi	2011 7	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot	2-#6 hot		
		3211.7	1=#3 DUL. #3 @ 3 75″	1-#3 DUL. #2 @ 2 75″	1=#J DUL. #2 @ 2 75″	1=#3 DUL. #2 @ 2 75″	1-#0 DUL. #2 @ 3 75″	2=#3 DUL 2_#3 @ 3 75"	2=#0 JUL 2_#2 @ 2 75″		
	50 nsf		#0 @ 0.75 1_#5 ton	#3 @ 3.75	#3 @ 3.75	#3 ⊛ 3.75 1-#6 ton	#3 @ 3.75 2-#5 ton	2-#3 @ 3.73	2-#0 @ 0.10		
	50 p31	3790.7	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2_#5 hot	1.#8 hot			
		0100.1	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	2 #3 @ 3 75"	#3 @ 3 75"			
	70 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	2-#5 ton	10 8 0.10			
	10 por	4369 7	1-#5 bot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot				
		100011	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	2-#3@375"				
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1# 8 top			
()		3905.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"	#3 @ 3.75"			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		4606.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"				
	70 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		5308.7	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"					
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	2-#5 top					
		4850.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	2-#5 bot.					
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"					
	50 psf		1-#5 top	1-#5 top	1-#6 top						
		5728.2	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"						
	70 psf	aar	1-#5 top	1-#5 top	1-#6 top						
		6605.5	1-#5 bot.	1-#5 bot.	1-#6 bot.						
(0E 4+)	20		#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	0 #7 +					
(35 1661)	30 psr	5000.0	1-#5 top	1-#5 top	1-#6 top	2-#5 t0p					
		<u>ᲔᲐᲙᲧ.Ծ</u>	1=#0 DOL #3 @ 3 7⊑″	1-#0 DOL. #2 @ 0 75″	1-#0 DUL. #2 @ 2 75"	∠=#3 DUL. 2_#3 @ 2.75″					
	50 pcf		#3 @ 3.75	#3 @ 3./3	#3 @ 3.73	2-#3 @ 3.75					
	50 hsi	6313.6	1-#5 top	1-#5 top	1-#6 hot						
		0313.0	1-#3 DUL. #3 @ 3 75″	#2 @ 2 75″	1-#0 DOL. #2 @ 2 75″						
	70 nsf		1-#5 ton	1-#5 ton	10 8 0.10						
		7287 5	1-#5 hot	1-#5 hot							
		. 201.0	#3 @ 3 75"	#3 @ 3 75"							
(40 feet)	30 nsf		1-#5 ton	1-#5 top	1-#6 top						
(60.	6049.2	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"						
	50 psf		1-#5 top	1-#5 top							
	P .	7154.6	1-#5 bot.	1-#5 bot.							
			#3 @ 3.75"	#3 @ 3.75"							
	70 psf		1-#5 top	1-#6 top							
		8260.0	1-#5 bot.	1-#6 bot.							
			#3 @ 3.75"	#3 @ 3.75"							



Lintel Width = 10" Lintel Depth = 10" Effective Depth = 7.6" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 3.75" = use two #3 stirrups @ 3.75" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof										
Span	load	Uniform Load			•	U	Lintel Span - Fee	t					
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft		
(10 feet)	30 psf		2-#6 top	1-#9 top	1-#8+1-#6 top								
		1899.1	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.								
			2-#3 @ 3.75"	#3 @ 3.75"	2-#3@3.75"								
	50 psf		1-#9 top	1-#8+1-#6 top									
		2215.0	1-#9 bot.	1-#8+1-#6 bot.									
			#3 @ 3.75"	2-#3 @ 3.75"									
	70 pst	0500.0	1-#8+1-#6 top										
		2530.8	1-#8+1-#6 DOL										
(15 foot)	20 pcf		2-#3 @ 3./5										
(13 1661)	50 psi	2502.3	1-#8±1-#6 hot										
		2002.0	2-#3@375"										
	50 psf												
	·	2949.7											
	70 psf												
		3397.1											
(20 feet)	30 psf												
		3211.7											
	50 auf												
	ou psr	2700 7											
		5/90.7											
	70 nsf												
	10 poi	4369.7											
(25 feet)	30 psf												
		3905.0											
	50 psf												
		4606.9											
	70 pst	5000 7											
		5308.7											
(30 feet)	30 nsf												
(001001)	00 por	4850.9											
		100010											
	50 psf												
		5728.2											
	70 psf												
		6605.5											
(0.5.4)													
(35 feet)	30 pst	5000.0											
		5339.8											
	50 nef												
	50 hsi	6313.6											
		0010.0											
	70 psf												
		7287.5											
(40 feet)	30 psf												
		6049.2											
	50 psf												
		7154.6											
	70												
	/U pst	0000.0											
1		020U.U											



Lintel Width = 10" Lintel Depth = 10" Effective Depth = 7.6" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 3.75" = use two #3 stirrups @ 3.75" O/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc	ement for Li torev Wood I	ntels in Load Frame + Ligh	Bearing Wa t Frame Roo	lls f	
Span	load	Uniform Load			•		Lintel Span - Fee	t		-	
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top				
		1924.6	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.				
			no stirrups	no stirrups	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3@4.5"
	50 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top				
		2240.4	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.				
	70 pcf		no stirrups	no stirrups	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#3 @ 4.5	2-#3 @ 4.5
	70 psi	2556.2	1-#3 l0p	1-#0 LUP	1-#5 LUP	1-#5 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	2-#0 l0p	1#0 LUP
		2000.0	1-#3 UUL	1-#0 DOL. #2 @ 4 5″	1-#3 DUL. #2 @ 4.5″	1-#0 DOL. #2 @ 4 5″	1-#3 DOL. #2 @ 4.5″	1-#0 DUL. #2 @ 4 5″	1-#0 UUL. #2 @ 4.5″	2-#5 DUL.	1-#0 DUL. #2 @ 4 5″
(15 feet)	30 nsf		1-#5 ton	#3 @ 4.5	#3 @ 4.5	#3@4.5 1-#5 ton	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#5 ton	#3 @ 4.5
(101001)	00 p31	2527 7	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#8 hot				
		LOLIN	no stirruns	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	2-#3@45"	#3 @ 4 5"
	50 psf		1-#5 top	1-#6 top	2-#5 top	1#8 top	2-#6 top				
		2975.2	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.				
			no stirrups	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1#8 top	1-#9 top
		3422.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#9 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1#8 top	2-#6 top
		3237.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"
	50 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1#8 top	2-#6 top	
		3816.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
	70		#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#3@4.5	#3 @ 4.5	2-#3 @ 4.5	
	70 psr	4205.0	1-#5 t0p	1-#0 top	1-#5 top	1-#6 top	1-#6 top	2-#5 t0p	2-#6 top		
		4393.2	1=#3 DUL. #3 @ 4 5″	1-#3 DUL. #3 @ 4 5″	1=#J DUL. #3 @ 4 5″	1°#0 DUL. #2 @ 4 5″	1-#0 DOL. #3 @ 4 5″	2=#3 DUL. 2_#3 @ 4.5"	2-#0 DUL 2-#2 @ 4.5"		
(25 feet)	30 nsf		#3 © 4.3 1-#5 ton	#5 @ 4.5	#5 @ 4.5	#5 @ 4.5	#3 @ 4.5	2-#5 ton	2-#3 @ 4.3	2-#6 ton	
(201000)	00 por	3930.5	1-#5 bot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot	1-#8 hot	2-#6 hot	
		000010	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1#8 top			
		4632.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		5334.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1#8 top			
		4876.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
	50 auf		#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	2-#3@4.5	#3 @ 4.5			
	50 psr	E7E0.0	1-#5 t0p	1-#0 top	1-#5 top	1-#6 top	2-#5 top				
		5755.0	1=#3 DUL. #3 @ 4 5″	1-#3 DUL. #3 @ 4 5″	1=#J DUL. #3 @ 4 5″	1°#0 DUL. #2 @ 4 5″	2-#3 DUL 2-#3 @ 4.5"				
	70 nsf		#3 © 4.3 1-#5 ton	#5 @ 4.5	#3 @ 4.5	2-#5 ton	2-#3 @ 4.3				
	10 por	6631.0	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 4.5″	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"					
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
. ,		5365.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
	50 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		6339.1	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"					
	70 psf		1-#5 top	1-#5 top	1-#6 top						
		7312.9	1-#5 bot.	1-#5 bot.	1-#6 bot.						
(40 44)	20		#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	1 #0 +					
(40 teet)	30 pst	6074 7	1 #5 bot	1 #E bot	1 #5 bot	1-#0 TOP					
		00/4./	1-#0 DOL #2 @ / 5″	1-#3 DUL. #3 @ / 5"	1-#3 DUL. #3 @ / ⊑″	1-#0 DUL. #2 @ 1 5"					
	50 nef		#J ⊌ 4.J 1-#5 ton	#0 ≪ 4.0 1-#5 ton	#0 ≪ 4.0 1-#β ton	#0 ≪ 4.0					
	00 hai	7180 1	1-#5 hot	1-#5 hot	1-#6 hot						
			#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"						
	70 psf		1-#5 top	1-#5 top	1-#6 top						
	· ·	8285.5	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						



Lintel Width = 10" Lintel Depth = 12" Effective Depth = 9.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

264

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

	Cround anour	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey Wood Frame + Light Frame Roof									
Floor Clear Snan	Ground Snow	Iotal Factored			Carry	ng secona s	torey wood i Lintel Snan - Fee	-rame + Lign	t Frame Roo	r		
feet	nsf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft	
(10 feet)	30 psf	120/11	2-#5 top	1#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top			2011	
. ,		1924.6	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.				
			2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"				
	50 psf		1#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top					
		2240.4	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.					
			#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"					
	70 psf		2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top						
		2556.3	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.						
(15 feet)	30 nef		2-#3 @ 4.5	#3 @ 4.5	2-#3 @ 4.3	2-#3 @ 4.5						
(13 1661)	50 psi	2527 7	2-#6 hot	1-#9 hot	1-#8±1-#6 hot	2-#8 hot						
		LOLI	2-#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"						
	50 psf		1-#9 top	1-#8+1-#6 top								
		2975.2	1-#9 bot.	1-#8+1-#6 bot.								
			#3 @ 4.5"	2-#3 @ 4.5"								
	70 psf											
		3422.6										
(20 feet)	30 nef		1_#8+1_#6 ton									
(201001)	00 p31	3237 1	1-#8+1-#6 hot									
		020111	2-#3 @ 4.5"									
	50 psf											
		3816.2										
	70 pst	4005.0										
		4395.2										
(25 feet)	30 psf											
()		3930.5										
	50 psf											
		4632.3										
	70(
	70 psr	5334.9										
		JJJ74.2										
(30 feet)	30 psf											
. ,		4876.3										
	50 psf											
		5753.6										
	70 pcf											
	70 psi	6631.0										
		000110										
(35 feet)	30 psf											
		5365.3										
	50 psf											
		6339.1										
	70 nsf											
	10 por	7312.9										
(40 feet)	30 psf											
		6074.7										
	F0											
	50 pst	7100 1										
		/100.1										
	70 psf											
		8285.5										



Lintel Width = 10" Lintel Depth = 12" Effective Depth = 9.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" O/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc ng Second S	ement for Li Storev Wood I	ntels in Load Frame + Ligh	Bearing Wa	lls f	
Span	load	Uniform Load			•		Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		1975.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		2291.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
	70		no stirrups	no stirrups	no stirrups	no stirrups	#3@6.5	#3@6.5	#3 @ 6.5	#3@6.5	#3 @ 6.5
	70 psi	2607.2	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 l0p	1-#0 LUP
		2007.2	no stirrups	no stirrups	no stirrups	1°#0 DUL. #3 @ 6.5″	1°#0 D0L #3 @ 6.5″	1=#0 DUL. #3 @ 6 5″	1-#0 DUL. #3 @ 6 5″	1=#0 JUL. #3 @ 6.5″	1=#0 D0L. #3 @ 6 5″
(15 feet)	30 nsf		1-#6 ton	1-#6 ton	1-#6 ton	#3 @ 0.5	#3@0.5	#3 @ 0.5	#3 @ 0.5	#3@0.5	#3@0.3
(101000)	00 p31	2578 7	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot
		201011	no stirrups	no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3026.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5″	2-#3 @ 6.5″
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		3473.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		3288.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top
		3867.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.
			no stirrups	no stirrups	#3 @ 6.5"	#3@6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		4446.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
(05 (1-1))	00		no stirrups	#3 @ 6.5	#3 @ 6.5	#3 @ 6.5	#3@6.5	#3 @ 6.5	2-#3@6.5	#3@6.5	2-#3@6.5
(25 feet)	30 pst	0001.4	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top
		3981.4	I-#6 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#0 DOL	2-#3 DOL	1-#8 DOL.
	50 pcf		1.#6 top	#3 @ 0.3 1_#6 top	#3 @ 0.3 1_#6 top	#3 @ 0.3	#3 @ 0.0	#3 @ 0.3 1_#6 top	2-#3 @ 0.0	2-#3 @ 0.0	#3 @ 0.0 2-#6 top
	50 psi	4683 3	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#8 hot	2-#6 hot
		1000.0	no stirruns	#3@65"	#3@65"	#3@65"	#3 @ 6 5"	#3@65"	2-#3@65"	#3 @ 6 5"	2-#3@65"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	2 #0 8 0.0
		5385.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top
		4927.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		1-#6 top	1-#6 top	1 <i>-</i> #6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		5804.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top			
		6681.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
(05 (+++))	00		#3@6.5	#3 @ 6.5	#3 @ 6.5	#3 @ 6.5	2-#3@6.5	#3 @ 6.5	1 //0 444	0.00	
(JO TEEL)	30 pst	5410.0	1 #6 bot	1 #6 bot	1 #6 bot	1-#0 TOP	1-#6 TOD	2-#0 TOD	1 #0 ho+	2-#0 LOP	
		0410.Z	I-#6 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#3 DOL.	1-#8 DOL.	2-#0 DOL	
	50 pcf		1.#6 top	#3 @ 0.3 1_#6 top	#3 @ 0.3 1_#6 top	#3 @ 0.3	#3 @ 0.0	2-#3 @ 0.0	#3 @ 0.3 2-#6 top	2-#3 @ 0.0	
	50 psi	6390.1	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#6 hot		
		0030.1	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"	2 #3 00t. 2-#3 @ 6 5"	2 #3 @ 6 5"		
	70 nsf		1-#6 ton	1-#6 top	1-#6 top	1-#6 top	2-#5 ton	1-#8 ton	2 // 0 @ 0.0		
	. o por	7363.9	1-#6 hot.	1-#6 hot.	1-#6 hot.	1-#6 bot.	2-#5 hot.	1-#8 hot.			
			#3 @ 6.5″	#3 @ 6.5″	#3 @ 6.5″	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5″			
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
· · · · /	P .	6125.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top			
		7231.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"			
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top				
		8336.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"				



Lintel Width = 10" Lintel Depth = 16" Effective Depth = 13.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" 0/C

Eleer Clear	Cround onour	Total Eastarad			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls	
Floor Clear	Ground Show	Iotal Factored			Carry	ng secona s	torey wood i Lintel Span - Fee	-rame + Lign	t Frame Roo	T	
feet	nef	lhe/ft	12 ft	13 ft	14 ft	15 #	16 ft	17 ft	18 ft	10 ft	20 ft
(10 feet)	30 nsf	103/11	1-#6 top	2-#5 ton	2-#5 top	1-#8 top	1-#8 ton	2-#6 top	1-#9 ton	1-#8+1-#6 ton	2-#8 ton
(101000)	00 por	1975.6	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 hot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 hot.
			#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top
		2291.4	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.
			2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	70 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top
		2607.2	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.
			2-#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
(15 feet)	30 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top
		2578.7	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.
			2-#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		1-#8 top	2-#6 top	2-#6 top	1-#9 top	2-#8 top	2-#8 top			
		3026.1	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	2-#8 bot.	2-#8 bot.			
			#3 @ 6.5"	2-#3@6.5"	2-#3 @ 6.5"	#3@6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"			
	70 pst		1-#8 top	2-#6 top	1-#9 top	2-#8 top					
		3473.5	1-#8 bot.	2-#6 bot.	1-#9 bot.	2-#8 bot.					
(00.6))	00(#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"	2-#3@6.5"	0.001				
(20 teet)	30 pst	00004	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top				
		3288.1	1-#8 DOT.	2-#6 DOT.	1-#9 DOT.	1-#8+1-#b DOT.	2-#8 DOT.				
	F0 =={		#3@ 6.5	2-#3@b.5	#3@6.5	2-#3@b.5	2-#3 @ b.5				
	ou hai	2007 1	2-#0 l0p	1-#9 t0p	1-#0+1-#0 l0µ						
		3007.1	2-#0 UUL.	1-#9 DOL.	1-#0+1-#0 UUL.						
	70 pcf		2-#3 @ 0.0	#3 @ 0.0	2-#3 @ 0.5						
	70 µ31	4446 1	1-#0 hot								
		4440.1	#3@65"								
(25 feet)	30 nsf		#3 @ 0.5	1-#9 ton							
(201001)	00 001	3981.4	2-#6 hot	1-#9 hot							
		0001.1	2-#3@65"	#3@65"							
	50 psf		1-#9 top	10 8 0.0							
		4683.3	1-#9 bot.								
			#3 @ 6.5"								
	70 psf										
		5385.1									
(30 feet)	30 psf										
		4927.3									
	50 psf										
		5804.6									
	70 psf										
		6681.9									
(35 feet)	30 pst										
		5416.2									
	E0 nof										
	ou hai	6200.1									
		0390.1									
	70 nsf										
	10 hai	7362.0									
		1000.0									
(40 feet)	30 nsf										
(101001)	00 poi	6125.6									
		0.20.0									
	50 nsf										
	60	7231.0									
	70 psf										
		8336.5									



Lintel Width = 10" Lintel Depth = 16" Effective Depth = 13.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls										
Snan	Inad	Uniform I oad			Carry	ng second a	Lintel Span - Fee	tanie + Eign					
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft		
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
. ,		2026.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2342.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2658.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		2629.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3077.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top		
		3524.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top		
		3339.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top		
		3918.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top			
		4497.1	1-#6 bot.	1 <i>-#</i> 6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
(25 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top		
		4032.4	1-#6 bot.	1 <i>-#</i> 6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	50 pst	170.1.0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4734.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
	70(no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"		
	70 pst	5400.4	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top		
		5436.1	1-#6 DOT.	1-#6 DOT.	1-#6 DOT.	1-#6 DOT.	1-#6 DOT.	1-#6 DOT.	2-#5 DOT.	2-#5 DOT.	1-#8 DOT.		
(20 feet)	20 pof		no surrups	no surrups	#3 @ 8.5	#3 @ 8.3	#3@ 8.5	#3 @ 8.5	2-#3 @ 8.5	2-#3 @ 8.5	#3 @ 8.5		
(SU leel)	SU þsi	4070.0	1-#0 l0µ	1-#0 LUP	1-#0 LUP	1-#0 LOP	1-#0 LOP	1-#0 LUP	2-#0 l0p	2-#0 l0p	1-#0 t0p		
		40/0.2	I-#0 UUL	I-#0 UUL	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	2-#3 UUL.	2-#0 DUL.	1-#0 DUL. #2 @ 0.5″		
	50 nef		1.#6 top	1-#6 top	#3 @ 0.3	#3 @ 0.3	#3@0.3	#3 @ 0.3	2=#3 @ 0.3	2*#3 @ 0.3	#3@0.J 2_#6 top		
	00 p31	5855 5	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2.#5 top	1-#8 hot	2-#6 hot		
		0000.0	no stirrups	no etirrune	1-#0 D0L. #2 @ 8 5″	1-#0 D0L. #2 @ 8.5″	1-#0 D0L. #2 @ 8.5″	1-#0 D0L. #2 @ 8 5″	2-#3 bot. 2-#3 @ 8 5″	1-#0 D0L. #3 @ 8 5″	2-#0 D0L 2_#3 @ 8.5″		
	70 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	1-#8 ton	1-#8±1-#5 ton		
	. o poi	6732.8	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 bot	1-#6 bot	1-#6 hot	2-#5 hot	1-#8 hot	1-#8+1-#5 hot		
		5. JE.U	no stirruns	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	2-#3@85"	#3 @ 8 5"	2-#3 @ 8 5"		
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	1-#8 top		
,,	P	5467.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		6441.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top		
		7414.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
			no stirrups	#3 @ 8.5″	#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5″	#3 @ 7″		
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		6176.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top		
		7282.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 7″		
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top		
		8387.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5'	2-#3 @ 7"	2-#3 @ 7"		





10″

Lintel Width = 10″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" 0/C

Eleer Clear	Ground onow	Total Eastarad	Minimum Reinforcement for Lintels in Load Bearing Walls										
Span	load	Uniform Load			Garryi	ng secona s	Lintel Span - Fee	rame + ∟ign t	t Frame Roo	•			
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft		
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top		
		2026.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top	1-#8+1-#6 top		
		2342.3	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.		
	70 ncf		#3 @ 8.5	#3 @ 8.5	2-#3@8.5	2-#3@8.5	#3@8.5	2-#3 @ 8.5	2-#3@8.5	#3@8.5	2-#3@8.5		
	70 psi	2658.2	1-#6 hot	2=#5 top 2=#5 hot	2-#5 top 2-#5 hot	1-#8 hot	2=#0 top 2=#6 hot	2-#6 hot	1-#9 top 1_#9 hot	1-#8+1-#6 top	2=#0 top 2=#8 hot		
		2030.2	#3 @ 8 5"	2-#3@85"	2-#3@85"	#3 @ 8 5"	2-#3@8.5"	2-#3@85"	#3 @ 8 5"	2-#3@85"	2-#3@85"		
(15 feet)	30 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top		
. ,		2629.6	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.		
			#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
	50 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top		
		3077.0	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.		
	70(2-#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"		
	70 pst	0504 F	2-#5 top	1-#8 top	2-#6 top	2-#6 t0p	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top		
		3024.0	2-#3 DUL 2_#3 @ 8.5"	1-#0 DUL. #3 @ 8 5″	2-#0 DUL. 2_#2 @ 8.5"	2-#0 DUL. 2_#2 @ 8.5"	1-#9 DUL. #3 @ 8 5″	1-#0+1-#0 JUL. 2_#2 @ 8.5"	2-#0 UUL 2_#2 @ 8.5"	1-#9+1-#0 DUL 2_#2 @ 8 5″	1-#9+1-#0 DUL. 2_#2 @ 8.5"		
(20 feet)	30 nsf		2-#5 ton	#3 @ 0.5	2-#3 @ 0.5	2-#6 ton	#3 @ 0.5	1-#8+1-#6 top	2-#8 ton	2-#8 ton	1-#9+1-#8 ton		
(201001)	00 por	3339.0	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.		
			2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
	50 psf		1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top		
		3918.0	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
			#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″		
	70 psf		1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2-#9 top			
		4497.1	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	2-#9 bot.			
(05 ()	00		#3 @ 8.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3@7"	2-#3 @ 7"			
(20 1661)	30 psr	4022.4	1-#8 t0p	2-#0 t0p	2-#6 top	1-#9 top	2-#8 t0p	2-#8 t0p	1-#9+1-#8 top	2-#9 top			
		4032.4	#3 @ 8 5"	2-#0 DUL 2-#3 @ 8.5"	2=#0 D0L 2=#3 @ 8.5"	#3 @ 8 5"	2=#0 DUL 2=#3 @ 8.5"	2=#0 DUL 2=#3 @ 8.5″	2-#3 @ 7″	2=#9 DUL. 2=#3 @ 7"			
	50 psf		2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	21001			
		4734.2	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
	70 psf		2-#6 top	1-#9 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		5436.1	2-#6 bot.	1-#9 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
(0.0.4)			2-#3 @ 8.5"	#3 @ 8.5"	2-#3@7"	2-#3@7"	2-#3@7"	2-#3@7"	0.001				
(30 teet)	30 pst	4978.2	2-#6 top	1-#9 top	1-#8+1-#6 TOP	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top				
			2-#0 DOL 0 #0 @ 9.5"	1-#9 DOL. #2 @ 9.5″	1-#8+1-#0 DOL 0 #2 @ 9 5"	2-#8 DOL 2 #2 @ 7"	1-#9+1-#8 DOL 0 #2 @ 7"	1-#9+1-#8 DOL 0 #2 @ 7"	2-#9 DOL 2 #2 @ 7"				
	50 nsf		1-#8+1-#5 ton	1-#8+1-#6 ton	2-#8 ton	1-#9+1-#8 ton	2-#9 ton	2-#3 @ 1	2-#3 @ 1				
	00 por	5855 5	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"						
	70 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top							
		6732.8	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.							
(05.1)			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7″	1 10 1 77 1	0.10					
(35 feet)	30 psf	E 407 0	2-#6 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		5467.2	2-#6 DOT.	1-#8+1-#6 DOL	2-#8 DOT.	2-#8 DOL	1-#9+1-#8 DOL	2-#9 DOT.					
	50 nsf		2-#3 @ 0.5 1-#8±1-#6 ton	2-#3 @ 0.5 2-#8 ton	2-#3 @ 7 1-#9±1-#8 ton	2-#3 @ 7	2-#3 @ 1	2-#3 @ 1					
	00 por	6441.0	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.							
			2-#3 @ 7"	2-#3 @ 7"	2-#3@7″	2-#3 @ 7"							
	70 psf		2-#8 top	2-#8 top	2-#9 top								
		7414.8	2-#8 bot.	2-#8 bot.	2-#9 bot.								
			2-#3 @ 7″	2-#3 @ 7″	2-#3 @ 7″								
(40 feet)	30 psf	AUT	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top						
		6176.6	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
	E0 not		2-#3@8.5"	2-#3@7"	2-#3@7"	2-#3 @ 7"	2-#3 @ 7"						
	ou bei	7 <u>9</u> 89 በ	2=#0 LOP 2=#8 hot	2-#0 LOP 2_#8 hot	1-#9+1-#8 L0β 1_#9±1_#8 ho+								
		1202.0	2-#3@7"	2-#3@7"	2-#3 @ 7"								
	70 psf		2-#8 top	1-#9+1-#8 top	2.001								
	P	8387.4	2-#8 bot.	1-#9+1-#8 bot.									
			2-#3 @ 7″	2-#3 @ 7″									



Lintel Width = 10″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

 * check applicability limits table A1.3 in appendix A to use this chart

<u>ה</u>

┛

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls									
Snan	load	Uniform I oad			Carry	ng second s	l intel Snan - Fee	tanie + Lign				
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft	
(10 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		2077.4	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		2393.3	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		2709.1	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
(15 ())	00		no stirrups	no stirrups	no stirrups	no stirrups	no stirrups	2-#3@10.5	2-#3 @ 10.5	2-#3@10.5	2-#3@10.5	
(15 TEET)	30 pst	0000.0	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		2080.0	2-#5 DOL	Z-#5 DOL	2-#5 DOL	2-#5 DOL	Z-#5 DOL	2-#3 DOL.	2-#3 DOL 0.#3.@ 10.5″	2-#3 DOL.	2-#3 DOL.	
	50 pcf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	
	50 p31	3128.0	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	
		0120.0	no stirruns	no stirruns	no stirruns	no stirruns	no stirruns	2-#3@105"	2-#3@105"	2-#3@105"	2-#3 @ 10 5"	
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		3575.4	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"	
(20 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
. ,	·	3389.9	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		3969.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
	4548.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.		
			no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
(25 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		4083.3	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
	F0(no stirrups	no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	
	50 pst	4705.0	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		4/85.2	2-#5 DOL	Z-#5 DOL	2-#5 DOL	2-#5 DOL	2-#0 DOL.	2-#3 DOL.	2-#3 DOL 0.#3.@ 10.5″	2-#3 DOL.	2-#3 DOL.	
	70 nef		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	
	70 psi	5487.0	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	
		5407.0	no stirruns	no stirruns	no stirruns	2-#3@105"	2-#3 @ 10.5"	2.#3 @ 10.5"	2-#3@105"	2-#3@105"	2-#3 @ 10 5"	
(30 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
(00.000)		5029.2	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
			no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	
		5906.5	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	
		6783.8	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	
(35 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	
		5518.1	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	
	50 ant		no stirrups	no stirrups	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	
	ou psr	6401.0	2-#5 t0p	2-#5 t0p	2-#5 t0p	2-#5 top	2-#5 t0p	2-#5 t0p	2-#0 top	2-#5 t0p	1-#8 top	
		0491.9	2*#J UUL	2*#J DUL	2-#3 JUL. 2 #2 @ 10 ⊑″	2=#J DUL 2 #2 @ 10 5"	2*#JUUL 2#2@105″	2=#3 DUL. 2 #2 @ 10 5″	2-#3 JUL 2 #2 @ 10 5″	2=#3 JUL. 2 #2 @ 10 5″	1=#0 DUL. #2 @ 10 5″	
	70 nef		2-#5 ton	2-#5 ton	2-#5 ton	2=#3 @ 10.3 2=#5 ton	2=#3 @ 10.5 2=#5 ton	2-#5 ton	2-#5 ton	2=#3@10.3 1=#8 ton	#3 @ 10.5	
	10 hai	7465.8	2-#5 hot	2.#5 top 2-#5 hot	2 #3 top 2-#5 hot	2 #5 top 2-#5 hot	2.#5 top 2-#5 hot	2 #5 top 2-#5 hot	2 #5 top 2-#5 hot	1-#8 hot	2 #6 hot	
		, 100.0	no stirruns	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	
(40 feet)	30 nsf		2-#5 ton	2-#5 top	2-#5 ton	2-#5 ton	2-#5 top	2-#5 ton	2-#5 ton	1-#8 ton	1-#8 top	
(101000)	00 poi	6227.5	2-#5 hot.	2-#5 hot.	2-#5 bot.	2-#5 bot.	2-#5 hot.	2-#5 bot.	2-#5 hot.	1-#8 bot.	1-#8 bot.	
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	2-#6 top	
	r.	7332.9	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5″	2-#3 @ 10.5"	
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8+1-#5 top	
		8438.3	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8+1-#5 bot.	
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	





Lintel Width = $10^{"}$ Lintel Depth = $24^{"}$ Effective Depth = $21.5^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 2-#6 top = top rebar 2-#6 bot.= bottom rebar 2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls									
Snan	load	Uniform I oad			Garryi	ng secona s	Lintel Snan - Fee	rame + ⊾ign t	L Frame Roo	•		
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft	
(10 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	
		2077.4	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	
			no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	2-#6 top	
		2393.3	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	
	70 pof		2-#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	
	70 psi	2700.1	2-#3 l0p 2 #5 hot	2-#0 l0p	2-#0 l0p	2-#0 l0p	1-#0 LUP	1-#0 LUP	2-#0 l0µ	2-#0 l0p	1-#9 top	
		2709.1	2=#3 DUL. 2=#3 @ 10 5"	2-#3 DUL 2-#3 @ 10.5"	2=#3 DUL. 2=#3 @ 10 5"	2=#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2=#0 JUL 2=#3 @ 10 5"	2=#0 JUL 2=#3 @ 10.5"	#3 @ 10 5"	
(15 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	2-#6 top	1-#9 top	
(/		2680.6	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	
	50 psf		2-#5 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#9 top	1-#8+1-#6 top	
		3128.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#9 bot.	1-#8+1-#6 bot.	
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	
	70 psf		2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	1-#8+1-#6 top	2-#8 top	
		3575.4	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	
(00 feet)	20 pof		2-#3 @ 10.5	2-#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3@10.5	#3 @ 10.5	2-#3@10.5	2-#3 @ 10.5	2-#3@10.5	
(20 leet)	30 psi	2380.0	2-#5 t0p 2-#5 hot	2-#3 l0p 2-#5 hot	2-#5 top 2-#5 hot	1-#0 LUP 1-#8 hot	2-#0 l0µ 2-#6 hot	2-#0 l0p 2-#6 hot	1-#9 t0p	1-#0+1-#0 LUP	2-#0 lUp 2-#8 hot	
		3309.9	2=#3 DUL 2=#3 @ 10 5"	2-#3 DUL 2-#3 @ 10.5"	2=#3 DUL. 2=#3 @ 10 5"	#3 @ 10 5"	2-#0 DUL 2-#3 @ 10.5"	2=#0 JUL 2=#3 @ 10 5"	#3 @ 10 5"	2_#3 @ 10.5"	2=#0 JUL 2=#3 @ 10 5"	
	50 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	
		3969.0	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	
			2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	
	70 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	
		4548.0	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	
			2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	
(25 feet)	30 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	
		4083.3	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	
	EQ pof		2-#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3@10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	2-#3 @ 10.5	2-#3 @ 10.5	
	50 hsi	4785.2	1-#8 hot	1-#8 hot	2-#6 hot	1-#9 top 1-#9 hot	1-#8+1-#6 hot	2=#0 t0p 2=#8 hot	2=#0 t0p 2=#8 hot	1-#9+1-#8 hot	2=#9 top 2=#9 hot	
		4705.2	#3 @ 10 5"	#3 @ 10 5"	2-#3 @ 10 5"	#3 @ 10 5"	2-#3 @ 10.5"	2-#3 @ 8 5"	2-#3@85"	2-#3@85"	2-#3 @ 8 5"	
	70 psf		1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top	2 10 8 0.0	
		5487.0	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
			#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
(30 feet)	30 psf	5029.2	1-#8 top	2-#6 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top	
			1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	50 pst	5000 F	2-#6 top	2-#6 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		0906.0	2-#0 DOL	2-#0 DOL.	1-#8+1-#0 DOL 0.#0 @ 10.5″	2-#8 DOL.	2-#8 DOL	1-#9+1-#8 DOL	2-#9 DOL			
	70 nsf		2-#6 ton	2-#3 @ 10.5 1-#8±1-#5 ton	2-#8 ton	2-#8 ton	2-#3 @ 0.5 1-#9±1-#8 ton	2-#3 @ 0.5	2*#3 @ 0.3			
	10 001	6783.8	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
(35 feet)	30 psf		1-#8 top	2-#6 top	1-#9 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top		
		5518.1	1-#8 bot.	2-#6 bot.	1-#9 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
			#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
	50 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		6491.9	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
	70 pof		2-#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	2-#3@8.5	2-#3@8.5	2-#3 @ 8.5				
	ru psi	7/65.9	1-#0+1-#5 LUP 1-#8+1-#5 hot	1-#0+1-#0 LUP 1_#8⊥1_#6 hot	2=#0 LOP 2=#8 hot	1-#9+1-#δ LUΩ 1_#9±1_#8 ho+	2-#9 LOP 2_#0 hot					
		1 100.0	2-#3 @ 10 5"	2-#3@85″	2 #3 0 UUL 2-#3 @ 8 5"	2-#3 @ 8 5"	2 #3 @ 8 5"					
(40 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top			
(· ·····/		6227.5	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5″	2-#3 @ 8.5″			
	50 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		7332.9	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3@8.5"	2-#3@8.5"	2-#3 @ 8.5"					
	70 psf	0400.0	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top						
		8438.3	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			Z-#3 @ 8.5	Z-#3 @ 8.5	2-#3 @ 8.5	∠-#3 @ ö.5						



Lintel Width = 10″ Lintel Depth = 24″ Effective Depth = 21.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 2-#6 top = top rebar 2-#6 bot.= bottom rebar 2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C



Tables for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof

USA

ILH 4x10	ILH 6x10	ILH 8x10	ILH 10x10
ILH 4x12	ILH 6x12	ILH 8x12	ILH 10x12
ILH 4x16	ILH 6x16	ILH 8x16	ILH 10x16
ILH 4x20	ILH 6x20	ILH 8x20	ILH 10x20
ILH 4x24	ILH 6x24	ILH 8x24	ILH 10x24





Floor Clear Span	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof					
feet	nef	lhe/ft	3.#	Δ.#	5.#	6#		
10 feet	hai	iua/it	1 #4 top	4 II.	J #E top	UIL		
TO IEEL			1-#4 top	1-#4 top	1-#5 top			
	30 pst	2393.9	1-#4 bot.	1-#4 bot.	1-#5 bot.			
			#3 @ 3.75″	#3 @ 3.75″	#3 @ 3.75″			
			1-#4 top	1-#4 top				
	50 psf	2709.7	1-#4 bot.	1-#4 bot.				
			#3 @ 3.75"	#3 @ 3.75"				
			1-#4 top	1-#4 ton				
	70 ncf	2025 5	1 #4 hot	1 #/ hot				
	70 pai	0020.0	1-#4 DOL.	1-#4 DUL.				
17.4			#3 @ 3.75	#3@3./5				
15 TEEL			1-#4 top	1-#4 top				
	30 pst	2997.0	1-#4 bot.	1-#4 bot.				
			#3 @ 3.75"	#3 @ 3.75″				
			1-#4 top	1-#4 top				
	50 psf	3444.4	1-#4 bot.	1-#4 bot.				
			#3 @ 3.75"	#3 @ 3.75"				
			1-#4 ton					
	70 nef	3801.0	1-#4 hot					
	70 pai	0001.0	1-#4 DOL.					
			#3 @ 3.75					
20 teet			1-#4 top					
	30 psf	3706.4	1-#4 bot.					
			#3 @ 3.75"					
			1-#4 top					
	50 psf	4285.4	1-#4 bot.					
			#3 @ 3 75"					
			1-#4 ton					
	70 nof	4064.4	1 #4 hot					
	70 µsi	4004.4	1-#4 DUL.					
05.4			#3@3.75					
25 feet			1-#4 top					
	30 psf	4399.7	1-#4 bot.					
			#3 @ 3.75"					
	50 psf	5101.6						
	70 nsf	5803.4						
	10 001	0000.1						
20 feet								
50 leet	00(50.45.0						
	30 pst	5345.b						
	50 psf	6222.9						
	70 nsf	7100.2						
35 feet								
JJ 1661	00 nof	E004.C						
	30 hai	0004.0						
	50 psf	6808.4						
	70 psf	7782.2						
40 feet								
10 1001	20 pcf	65// 0						
	au hai	0344.0						
	50 psf	7649.4						
	70 psf	8754.8						



Lintel Width = 4" Lintel Depth = 10" Effective Depth = 7.8" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1.#4 top = top rebar 1.#4 bot.= bottom rebar #3 @ 3.75" = use one #3 stirrup @ 3.75" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof							
Span	load	Uniform Load		Lintel Span - Feet						
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft				
10 feet	30 psf		1-#4 top	1-#4 top	1-#4 top	1-#5 top				
		2403.9	1-#4 bot.	1-#4 bot.	1-#4 bot.	1-#5 bot.				
		210010	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"				
	50 ncf		1_#/ ton	1-#4 ton	1_#/ top	1_#5 ton				
	on her	0710.0	1-#4 top	1-#4 LUP	1-#4 LUP	1 // h-t				
		27 19.8	1-#4 DOL	1-#4 DOL	1-#4 DOL	1-#5 DOL.				
			#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5				
	70 psf		1-#4 top	1-#4 top	1-#4 top					
		3035.6	1-#4 bot.	1-#4 bot.	1-#4 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
15 feet	30 psf		1-#4 top	1-#4 top	1-#4 top					
		3007.1	1-#4 bot.	1-#4 bot.	1-#4 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
	50 psf		1-#4 top	1-#4 top	1-#5 top					
		3454 5	1-#4 hot	1-#4 hot	1-#5 hot					
		0101.0	#2 @ 1 5"	#3 @ 1.5"	#3 @ 1.5"					
	70. nof		#J @ 4.J	#J ⊚ 4.J	70 18 4.0					
	70 hai	0001.0	1-#4 top	1-#4 LUP						
		3901.9	1-#4 DOL	1-#4 DOL						
			#3 @ 4.5"	#3 @ 4.5"						
20 feet	30 pst		1-#4 top	1-#4 top						
		3716.5	1-#4 bot.	1-#4 bot.						
			#3 @ 4.5"	#3 @ 4.5"						
	50 psf		1-#4 top	1-#4 top						
		4295.5	1-#4 bot.	1-#4 bot.						
			#3 @ 4.5"	#3 @ 4.5"						
	70 psf		1-#4 top							
		4874 5	1-#4 hot							
		0.7107	+2 @ / 5″							
05 foot	20 nof		#J @ 4.J	1 #4 top						
23 1661	ou hei	4400.0	1-#4 top	1-#4 LUP						
		4409.8	1-#4 DOT.	1-#4 DOT.						
			#3 @ 4.5	#3 @ 4.5						
	50 pst		1-#4 top							
		5111.7	1-#4 bot.							
			#3 @ 4.5″							
	70 psf		1-#4 top							
		5813.5	1-#4 bot.							
			#3 @ 4.5″							
30 feet	30 psf		1-#4 top							
		5355.7	1-#4 bot.							
			#3 @ 4 5"							
	50 psf		1-#4 ton							
		6233.0	1_#4 hot							
		0200.0	1-#4 DUL. #2 @ 4.5″							
	70 nof		#3 @ 4.5							
	/u psi	7110.0								
		7110.3								
35 feet	30 psf		1-#4 top							
		5844.6	1-#4 bot.							
			#3 @ 4.5"							
	50 psf									
		6818.5								
	70 nsf									
	poi	7792.3								
		1102.0								
/D faat	20 nof		1_#4 top							
40 1881	an hai	00000	17#4 LUP							
		6554.0	1-#4 bot.							
			#3 @ 4.5"							
	50 psf									
		7659.4								
	70 psf									
		8764.9								



Lintel Width = 4" Lintel Depth = 12" Effective Depth = 9.8" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#4 top = top rebar 1-#4 bot.= bottom rebar

1-#4 bot.= bottom rebar #3 @ 4.5" = use one #3 stirrup @ 4.5" O/C

Floor Clear	Ground snow	Total Factored			Minimu Carryin	g Second Store	ent for Lintels i ey ICF + Light F	n Load Bearing rame Roof	Walls
Span	nof	Uniterin Loau	2 #	4.#	E #	Einter Span - Feet	7 #	0 #	0.#
10 feet	20 pcf	105/11	3 II 1 #4 top	4 IL	3 II 1 #4 top	0 IL 1 #/ top	/ IL 1 #5 top	0 IL	9 IL 1 #5 top
TO TEEL	30 h2i	2422.0	1 #4 top	1 #4 top	1 #4 top	1 #4 top	1 #5 hot	1 #5 hot	1 #5 hot
		2423.9	1"#4 JUL. #3 @ 6 5"	1*#4 DUL. #3 @ 6 5″	1*#4 DUL. #2 @ 6 5″	1*#4 DUL #3 @ 6 5″	1=#3 DUL. #3 @ 6 5″	1=#3 DUL. #3 @ 6 5″	1=#3 DUL. #3 @ 6 5″
	50 nef		#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	#3@0.5	#3 @ 0.3	#3 @ 0.3	#3@0.3
	00 h8i	2720.7	1 #4 top	1 #4 top	1 #4 top	1 #4 top	1 #5 hot	1 #5 hot	
		2139.1	1"#4 DUL. #2 @ 6 5″	1=#4 JUL. #2 @ 6 5″	1"#4 DUL. #2 @ 6 5"	1*#4 DUL. #2 @ 6 5″	1°#3 DUL. #3 @ 6 5″	1°#3 DUL. #2 @ 6 5″	
	70 nef		#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	#3 @ 0.3	
	70 psi	2055.6	1 #4 bot	1 #4 bot	1 #4 bot	1 #5 hot	1 #5 hot		
		3033.0	1-#4 DUL. #2 @ 6 5″	#2 @ 6 5″	1-#4 DUL. #2 @ 6 5″	1-#3 DUL. #2 @ £ 5″	1-#J DUL. #2 @ 6 5″		
15 feet	30 nef		#3 @ 0.3	#3 @ 0.5	#3 @ 0.3	#3 @ 0.5	#3 @ 0.3		
10 1001	00 psi	3027.0	1-#4 top	1-#4 top	1-#4 top	1-#5 top	1-#5 top		
		0021.0	#3 @ 6 5″	#3 @ 6 5″	#3 @ 6 5″	#2 @ 6 5"	#3 @ 6 5"		
	50 nef		1-#4 ton	1-#4 ton	1-#4 ton	1-#5 ton	//0 60.0		
	00 por	3474.4	1-#4 hot	1-#4 hot	1-#4 hot	1-#5 hot			
		011.1	#3@65"	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"			
	70 nsf		1-#4 ton	1-#4 ton	1-#4 ton	1-#5 ton			
	10 poi	3921.9	1-#4 hot	1-#4 hot	1-#4 hot	1-#5 hot			
		002110	#3@65″	#3 @ 6 5"	#3 @ 6 5"	#3@65"			
20 feet	30 nsf		1-#4 top	1-#4 top	1-#4 top	1-#5 ton			
201000	00 poi	3736.4	1-#4 hot	1-#4 bot	1-#4 bot	1-#5 hot			
		0100.1	#3@65″	#3 @ 6 5"	#3 @ 6 5"	#3@65″			
	50 psf		1-#4 top	1-#4 top	1-#4 top				
		4315.4	1-#4 bot.	1-#4 bot.	1-#4 bot.				
		101011	#3@65″	#3 @ 6 5"	#3 @ 6 5"				
	70 psf		1-#4 top	1-#4 top	1-#5 top				
		4894.5	1-#4 bot.	1-#4 bot.	1-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
25 feet	30 psf		1-#4 top	1-#4 top	1-#5 top				
		4429.8	1-#4 bot.	1-#4 bot.	1-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
	50 psf		1-#4 top	1-#4 top	1-#5 top				
	·	5131.6	1-#4 bot.	1-#4 bot.	1-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5″	#3 @ 6.5"				
	70 psf		1-#4 top	1-#4 top					
		5833.5	1-#4 bot.	1-#4 bot.					
			#3 @ 6.5"	#3 @ 6.5"					
30 feet	30 psf		1-#4 top	1 <i>-#</i> 4 top					
		5375.6	1-#4 bot.	1-#4 bot.					
			#3 @ 6.5"	#3 @ 6.5"					
	50 psf		1-#4 top	1-#4 top					
		6252.9	1-#4 bot.	1-#4 bot.					
			#3 @ 6.5"	#3 @ 6.5"					
	70 psf		1-#4 top	1-#4 top					
		7130.2	1-#4 bot.	1-#4 bot.					
			#3 @ 6.5″	#3 @ 6.5″					
35 feet	30 psf		1-#4 top	1-#4 top					
		5864.6	1-#4 bot.	1-#4 bot.					
			#3 @ 6.5"	#3 @ 6.5"					
	50 pst		1-#4 top	1-#5 top					
		6838.4	1-#4 bot.	1-#5 bot.					
	70 (#3 @ 6.5"	#3 @ 6.5"					
	/U pst	70/0 0	1-#4 top						
		/812.2	1-#4 bot.						
40.5	00.57		#3 @ 6.5	4.841					
40 feet	30 pst	0574.0	1-#4 top	1-#4 top					
		65/4.0	1-#4 bot.	1-#4 bot.					
	E0		#3 @ 6.5	#3 @ 6.5					
	ou pst	7670 4	1-#4 TOP						
		/0/9.4	1-#4 DOL. #2 @ 6 5 "						
	70 pcf		#3 @ 0.3						
	10 hai	8784 8	1-#4 top 1_#/ bot						
		0704.0	1"#4 DUL. #3 @ 6 5"						
			#J & 0.0						



Lintel Width = 4″ Lintel Depth = 16″ Effective Depth = 13.75″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 6.5" = use one #3 stirrup @ 6.5" 0/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls									
Span	load	Uniform Load			•••••		Lintel Span - Fee	t				
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft	
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	
		2444.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	
		2760.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1 <i>-</i> #5 top	1-#5 top	1 <i>-</i> #6 top	1-#6 top	
		3076.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	
		3047.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	
		3495.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3@7"	#3 @ 7"	#3 @ 7"	
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	
		3942.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	
(00.6.1)	00 <i>(</i>		#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7"	#3 @ 7"	#3 @ 7"	
(20 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	
		3756.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.	
	50(#3@8.5	#3 @ 8.5	#3 @ 8.5	#3@8.5	#3 @ 8.5	#3 @ 8.5	#3@7	#3@7	#3@7	
	50 pst	1000.0	1-#5 TOP	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top	
		4336.0	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#b DOT.	1-#6 DOT.	1-#8 DOT.	1-#8 DOT.	
	70	f	#3@8.5	#3@8.5	#3@8.5	#3@8.5	#3@8.5	#3@/	#3@/	#3@7	#3@7	
	70 þsi	1015.0	1-#0 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	
		4915.0	1-#3 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#5 DOL.	1-#0 DOL.	1-#8 DOL.	1-#8 DOL.	1-#8 DOL.	
(25 foot)	20 pcf		#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.3	#3 @ /	#3 @ /	#3 @ /	#3 @ 7	#3 @ 7	
(20 1661)	ou hei	4450.2	1 #5 bot	1 #5 bot	1 #5 hot	1 #5 hot	1 #5 hot	1-#0 t0p	1 #0 top	1 #0 top	1 #0 top	
		4430.3	1=#3 DUL. #3 @ 0 ⊑″	1-#J DUL. #2 @ 0 ⊑″	1°#3 DUL. #2 @ 0 ⊑″	1°#3 DUL. #3 @ 0 ⊑″	1°#3 DUL. #2 @ 7″	1=#0 DUL. #2 @ 7″	#2 @ 7"	1=#0 UUL. #2 @ 7″	1=#0 DUL. #2 @ 7″	
-	50 nef		#3 @ 0.5	#3@0.5	#3@0.3 1_#5 ton	#3@0.5	#3 @ 7	#3 @ 7	#3 @ 7	#3 @ 7	#3 @ 7	
	50 psi	5152 1	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#9 hot	
		J1J2.1	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"	1-#3 000. #3 @ 7″	
	70 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#6 ton	1-#8 ton	1-#8 ton	1-#9 ton	
	10 001	5854.0	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#9 hot	
		000110	#3 @ 8 5"	#3@85″	#3@85"	#3 @ 7"	#3 @ 7″	#3 @ 7"	#3 @ 7"	#3 @ 7″	#3 @ 7″	
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top	
(,		5396.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#9 top		
		6273.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.		
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7"	#3 @ 7″	#3 @ 7″	#3 @ 7″		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top	1-#8 top			
		7150.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″			
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top	1-#8 top	1 <i>-</i> #8 top	1-#9 top	
		5885.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.	
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top	1-#8 top			
		6858.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7"	#3 @ 7"	#3@7″	#3 @ 7"			
	70 psf	7000 7	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top				
		7832.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.				
(40.5.1)	00(#3 @ 8.5	#3 @ 8.5"	#3 @ 8.5	#3@7"	#3@7"	#3@7"	4.101	1.001		
(40 feet)	30 pst	05045	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top		
		6594.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.		
	E0		#3@8.5	#3 @ 8.5	#J @ 8.5	#3@/	#3@/	#3@/	#3@/	#3@1		
	ou pst	7600.0	1-#0 TOP	1-#0 TOP	1-#5 TOP	1-#b top	1-#8 top	1-#ö top	1-#9 TOP			
		7999.9	1-#0 DOL.	1-#0 DOL.	1-#3 DOL.	I-#0 DOL. #0 ⊛ 7″	I-#ŏ DOL. #0 @ 7″	1-#ŏ DOI. #0 @ 7″	I-#9 DOL. #0 @ 7″			
	70 pcf		#3 @ 0.0 1_#5 top	#3 \& 0.0	#3 & 0.0	#3 @ / 1_#6 ton	#3 @ / 1_#9 top	#3 @ / 1_#8 ton	#3@1			
	10 h21	8805 3	1-#5 hot	1-#5 hot	1-#5 top	1-#0 t0p	1-#8 hot	1-#0 tup 1_#8 hot				
		0000.0	1-π JUUL. #3@25″	1-#J DUL. #3 @ 2 5″	ו-#JUUL. #מ@ גגיי	1-#0 DUL. #3 @ 7″	1-#0 DUL #3 @ 7″	1-π0 DUL. #3 @ 7″				
			// U 😅 U.J	// U 😌 U.J	// v 🙂 U.J	1001	1001	10 6 1				



Lintel Width = 4" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 7" = use #3 stirrup @ 7" 0/C
FI O					Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls	
Floor Clear	Ground snow	Iotal Factored			Carryi	ng Second S	torey ICF + L	ight Frame I	Roof		
Spall	IUau	UIIIUIIII LUAU	12 #	12 #	14 #	15 #	16 #	17#	18 #	10 #	20.#
(10 feet)	20 nsf	105/11	1_#6 ton	1-#8 ton	14 II 1-#8 ton	1.#8 ton	1_#9 ton	1.#9 ton	10 11	1911	20 11
(101000)	00 por	2444 4	1-#6 hot	1-#8 hot	1-#8 hot	1-#8 hot	1-#9 hot	1-#9 hot			
		2111.1	#3 @ 8 5"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"	#3 @ 7"			
	50 nsf		1-#8 top	1-#8 top	1-#8 ton	1-#8 ton	1-#9 ton	1001			
	00 por	2760.2	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″				
	70 psf		1-#8 top	1-#8 top	1-#9 top	1-#9 top					
		3076.1	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.					
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″					
(15 feet)	30 psf		1-#8 top	1-#8 top	1-#9 top	1-#9 top					
		3047.5	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.					
			#3 @ 7″	#3 @ 7″	#3 @ 7″	#3 @ 7″					
	50 psf		1-#8 top	1-#8 top	1-#9 top						
		3495.0	1-#8 bot.	1-#8 bot.	1-#9 bot.						
			#3 @ 7″	#3 @ 7″	#3 @ 7″						
	70 psf		1-#8 top	1-#9 top							
		3942.4	1-#8 bot.	1-#9 bot.							
(0.0.())			#3 @ 7"	#3 @ 7"							
(20 feet)	30 pst		1-#8 top	1-#9 top	1-#9 top						
		3756.9	1-#8 bot.	1-#9 bot.	1-#9 bot.						
	50 auf		#3@7	#3@7	#3@7						
	ou hai	4006.0	1-#9 l0p	1-#9 lop							
		4330.0	1-#9 DUL. #2 @ 7″	1-#9 DUL. #2 @ 7″							
	70 nsf		#3 @ 7 1_#9 ton	#3@1							
	70 p31	4915.0	1-#9 hot								
		1010.0	#3 @ 7"								
(25 feet)	30 psf		1-#9 top								
()		4450.3	1-#9 bot.								
			#3 @ 7″								
	50 psf		1-#9 top								
		5152.1	1-#9 bot.								
			#3 @ 7″								
	70 psf										
		5854.0									
(30 feet)	30 psf										
		5396.1									
	50 auf										
	50 psr	0070.4									
		6273.4									
	70 nef										
	70 psi	7150.8									
		7150.0									
(35 feet)	30 psf										
(001000)	00 por	5885.1									
	50 psf										
		6858.9									
	70 psf										
		7832.7									
(40 feet)	30 psf										
		6594.5									
	50 psf										
		7699.9									
	70 (
	70 pst	0005.0									
		8805.3									



Lintel Width = 4" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 7" = use #3 stirrup @ 7" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc ng Second S	ement for Li	ntels in Load	Bearing Wa	lls	
Span	load	Uniform Load	form Load								
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top
		2464.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.
			No stirrups	No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#5 top	1-#5 top	1 <i>-</i> #5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top
		2780.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top
		3095.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top
		3067.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		3514.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		3962.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top
		3776.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top
		4355.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.
			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top
		4934.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.
(05.6.1)			No stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
(25 feet)	30 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top
		4470.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	50 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top
		51/1.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.
	70(#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3@10.5	#3 @ 10.5	#3@8.5	#3@8.5	#3@8.5	#3@8.5
	70 pst	5070 7	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top	1-#8 top
		58/3./	1-#3 DOL	1-#5 DOL.	1-#3 DOL.	1-#3 DOL.	1-#3 DOL.	1-#0 DOL.	1-#6 DOL.	I-#8 DOL.	1-#8 DOL.
(20 faat)	20 pof		#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5	#3 @ 8.5
(SU IEEL)	30 psi	E41E 0	1-#0 l0p	1-#0 l0p	1-#0 l0p	1-#5 l0p	1-#0 top	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 lUp
		0415.9	1-#3 UUL. #2 @ 10.5"	1-#0 DUL.	1-#0 DUL.	1-#0 DUL. #0 @ 10 5″	1-#0 DUL.	1-#0 DUL. #2 @ 0.5″	1-#0 DUL. #2 @ 0.5"	1-#0 UUL. #2 @ 0.5″	1-#0 DUL. #2 @ 0.5″
	50 pcf		#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 0.3	#3@0.3	#3 @ 0.3	#3@0.5
	00 p3i	6203.2	1-#5 hot	1-#5 hot	1-#5 hot	1.#5 hot	1-#5 hot	1-#6 hot	1-#8 hot	1-#8 hot	1-#0 hot
		0200.2	#3 @ 10 5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10.5"	#3 @ 8 5"	#3 @ 8 5"	#2 @ 8 5"	+2 @ 2 5″
	70 nsf		#3 @ 10.3 1_#5 ton	#3 @ 10.3	#3 @ 10.3	#3 @ 10.5	#3 € 10.3 1-#5 ton	#0 @ 0.0	#3 @ 0.5	#3 @ 0.3	#3 ₩ 0.3
		7170 5	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#8 hot	1-#8 hot	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10.5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top
()		5904.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top	
		6878.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top		
		7852.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#8 top	1-#8 top	1-#8 top	
. /	· ·	6614.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top	1-#8 top		
		7719.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#8 top			
		8825.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#8 bot.			
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5″	#3 @ 8.5"	#3 @ 8.5"			





Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 8.5" = use #3 stirrup @ 8.5" O/C

					Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls	
Floor Clear	Ground snow	Iotal Factored			Carry	ing Second S	torey ICF + L	ight Frame I	Roof		
feet	nsf	lhs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf	150/11	1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top	15 1	20 11
(,		2464.2	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 psf		1-#6 top	1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top			
		2780.0	1-#6 bot.	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.			
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"			
	70 psf		1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top				
		3095.8	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
(15 feet)	30 psf		1-#6 top	1-#8 top	1-#8 top	1-#8 top	1-#9 top				
		3067.3	1-#6 bot.	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.				
	50(#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"				
	50 pst	05447	1-#8 top	1-#8 top	1-#8 top	1-#9 top	1-#9 top				
		3014.7	I-#8 DOL.	1-#8 DOL	1-#8 DOL	1-#9 DOL.	1-#9 DOL.				
	70 ncf		#3 @ 8.5	#3 @ 8.5	#3 @ 8.0	#3@8.0	#3 @ 8.5				
	70 psi	2062.1	1-#8 hot	1-#0 t0p	1-#8 hot	1-#9 top	1-#9 top				
		0002.1	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"				
(20 feet)	30 nsf		1-#8 ton	1-#8 ton	1-#8 top	1-#9 top	//0 @ 0.0				
(201000)	00 por	3776.7	1-#8 bot.	1-#8 bot.	1-#8 bot.	1-#9 bot.					
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"					
	50 psf		1-#8 top	1-#8 top	1-#9 top	1-#9 top					
		4355.7	1-#8 bot.	1-#8 bot.	1-#9 bot.	1-#9 bot.					
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"					
	70 psf		1-#8 top	1-#9 top	1-#9 top						
		4934.7	1-#8 bot.	1-#9 bot.	1-#9 bot.						
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"						
(25 feet)	30 psf		1-#8 top	1-#9 top	1-#9 top						
		4470.0	1-#8 bot.	1-#9 bot.	1-#9 bot.						
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"						
	50 pst	5171.0	1-#8 top	1-#9 top							
		51/1.9	1-#8 bot.	1-#9 bot.							
	70 ncf		#3 @ 8.5	#3 @ 8.5							
	70 µ31	5873 7	1-#9 top								
		3070.7	#3 @ 8 5"								
(30 feet)	30 psf		1-#9 top								
(******)		5415.9	1-#9 bot.								
			#3 @ 8.5"								
	50 psf										
		6293.2									
	70 psf										
		7170.5									
(35 feet)	30 psf		1-#9 top								
		5904.8	1-#9 bot.								
	E0 pof		#3@8.5								
	ou hai	6070 7									
		00/0./									
	70 nsf										
	10 por	7852.5									
(40 feet)	30 psf										
. ,		6614.2									
	50 psf										
		7719.6									
	70 psf										
		8825.1									



Lintel Width = 4" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#4 top = top rebar 1-#4 bot.= bottom rebar #3 @ 8.5" = use #3 stirrup @ 8.5" O/C



Floo	r Clear	Ground snow	Total Factored	d Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Span - Feet										
f	pan	nef	lhs/ft	3 ft	A ft	5.ft	6 ft	7 ft	8 ft	Q ft	10 ft	11 #		
(10) faat)	20 nef	103/11	1_#4 top	1-#4 top	1-#5 ton	1_#5 top	7 11	011	511	TOIL			
(10	5 1001)	00 p31	2708 7	1_#1 hot	1-#4 bot	1.#5 hot	1-#5 hot							
			2130.1	1-#4 DUL #2 @ 2 75″	1-#4 DUL #2 @ 2 75″	1-#J DUL. #2 @ 2 75″	1-#3 000. #2 @ 2 75″							
		50 pcf		#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	#3 @ 3.75							
		50 þSi	0114.6	1-#4 l0p	1-#4 t0p	1 #5 top	1#5 hot							
			3114.0	1-#4 UUL.	1-#4 DUL	1-#0 DOL.	1-#0 DUL.							
		70		#3@3.75	#3@3.75	#3@3.75	#3@3.75							
		70 psr	0400.4	1-#4 top	1-#4 top	1-#5 top								
			3430.4	1-#4 DOT.	1-#4 DOT.	1-#5 DOT.								
				#3 @ 3.75	#3@3.75	#3@3.75								
(15	o feet)	30 pst		1-#4 top	1-#5 top	1-#5 top								
			3401.9	1-#4 bot.	1-#5 bot.	1-#5 bot.								
				#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"								
		50 psf		1-#4 top	1-#5 top	1-#5 top								
			3849.3	1-#4 bot.	1-#5 bot.	1-#5 bot.								
				#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"								
		70 psf		1-#4 top	1-#5 top									
			4296.7	1-#4 bot.	1-#5 bot.									
				#3 @ 3.75"	#3 @ 3.75"									
(20	D feet)	30 psf		1-#4 top	1-#5 top									
			4111.2	1-#4 bot.	1-#5 bot.									
				#3 @ 3.75"	#3 @ 3.75"									
		50 psf		1-#4 top	1-#5 top									
			4690.3	1-#4 bot.	1-#5 bot.									
				#3 @ 3.75"	#3 @ 3.75"									
		70 psf		1-#4 top										
			5269.3	1-#4 hot										
			0200.0	#3 @ 3 75"										
(25	5 feet)	30 nsf		1-#4 ton	1-#5 top									
(20	5 1001)	00 poi	4804.6	1-#4 hot	1-#5 hot									
			1001.0	#3 @ 3 75″	#3 @ 3 75"									
		50 nsf		1-#4 ton	10 6 0.10									
		00 001	5506.4	1-#/1 hot										
			3300.4	+2 @ 3 75″										
		70 nef		#0 @ 0.75										
		70 µ31	60000	1 #4 bot										
			0200.0	1-#4 DUL #2 @ 2 75″										
(20) faat)	20 nof		#3 @ 3.75										
(30	J leel)	30 þSi	E7E0 4	1-#4 l0p										
			5750.4	1-#4 UUL.										
		50 mm		#3@3.75										
		ou hei	0007.0	1-#4 l0p										
			6627.8	1-#4 DOT.										
		70(#3 @ 3.75										
		70 pst	7505.4											
			/ 505.1											
(05	- (I)	00(4 // 4 1										
(35	o reel)	30 psr	0000.4	1-#4 top										
			6239.4	1-#4 DOT.										
				#3 @ 3.75										
		50 pst		1-#5 top										
			7213.2	1-#5 bot.										
				#3 @ 3.75"										
		70 pst												
			8187.0											
(40	D feet)	30 psf		1-#5 top										
			6948.8	1-#5 bot.										
				#3 @ 3.75"										
		50 psf												
			8054.2											
		70 psf	0450.0											
			9159.6											
1														



Lintel Width = 6" Lintel Depth = 10" Effective Depth = 7.8" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#5 top = top rebar 1-#5 bot.= bottom rebar

#3 @ 3.75^{°′} = use one #3 stirrup @ 3.75^{°′} O/C

Floor Clear	Ground snow	Total Factored Uniform Load			Minim Carryi	ium Reinforc	ement for Li torey ICF + I	ntels in Load Light Frame I	l Bearing Wa Roof	lls	
Span	1020	Uniform Load	0.4	4.4	F #	6.4	Lintel Span - Fee		0.4	10.4	44.0
(10 feet)	20 pof	IDS/IT	3 II	4 II	3 II	0 II	/ II 1 #5 top	8 II	9 π	ιυπ	IIπ
(TO Reel)	SU þsi	0014.0	1-#5 LOP	1-#0 LOP	1-#0 LUP	1-#0 top	1-#0 l0p	1-#0 LUP			
		2814.0	1-#5 DOL.	1-#3 DOL	1-#5 DOL	1-#3 DOL.	1-#5 DOL.	1-#0 DOL.			
	EQ pof		#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5			
	ou hai	2100.0	1-#5 LOP	1-#0 LOP	1-#0 LUP	1-#0 top	1-#0 LUP				
		3129.8	1-#5 DOL.	1-#3 DOL	1-#5 DOL.	1-#3 DOL.	1-#0 DOL.				
	70 pof		#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5				
	70 psi	2445.7	1-#5 LOP	1-#0 LOP	1-#0 LUP	1-#0 top	1-#0 LUP				
		3440.7	1-#5 DOL.	1-#3 DOL	1-#5 DOL.	1-#3 DOL.	1-#0 DOL.				
(1E feet)	20 pof		#3@4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5	#3 @ 4.5				
(15 leet)	30 psi	0417.1	1-#5 LOP	1-#0 LOP	1-#0 LUP	1-#0 top	1-#0 LUP				
		3417.1	1-#0 UUL. #0 @ 4.5"	1-#3 DUL. #2 @ 4.5"	1-#0 DOL.	1-#3 DUL.	1-#0 UUL.				
	EQ nof		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.0				
	ou hai	2064.6	1-#5 LOP	1-#0 LOP	1-#0 LUP	1-#0 top					
		3004.0	1-#0 UUL. #0 @ 4.5"	1-#3 DUL. #2 @ 4.5"	1-#0 DOL.	1-#3 DUL.					
	70 pcf		#3 @ 4.3	#3 @ 4.3	#3 @ 4.0	#3 @ 4.3					
	70 psi	4210.0	1-#5 LOP	1-#0 LOP	1-#0 LUP						
		4312.0	1-#0 UUL.	1-#5 DUL.	1-#3 DUL.						
(00 feet)	20 nof		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	1 #5 top					
(20 leet)	30 hsi	4100 F	1-#3 l0p	1-#0 LOP	1-#0 LUP	1-#5 lop					
		4120.0	1-#5 DOL.	1-#3 DOL	1-#5 DOL	1-#3 DOL.					
	50 auf		#3@4.5	#3@4.5	#3 @ 4.5	#3 @ 4.5					
	ou psr	4705.0	1-#5 top	1-#5 top	1-#5 top						
		4/05.0	1-#5 DOL.	1-#3 DOL	1-#5 DOL						
	70 pof		#3@4.5	#3 @ 4.5	#3 @ 4.5						
	70 psr	5004.0	1-#5 top	1-#5 top							
		5264.b	1-#5 DOL.	1-#3 DOL							
(OE feet)	20 pof		#3@4.5	#3 @ 4.5	1.45 top						
(20 leet)	30 psi	4010.0	1-#5 LOP	1-#0 LOP	1-#0 LUP						
		4019.9	1-#0 UUL.	1-#5 DUL.	1-#3 DUL.						
	50 pcf		#3 @ 4.3	#3 @ 4.3	#3 @ 4.0						
	50 hsi	5501 7	1 #5 hot	1 #5 hot							
		JJZ1./	1°#3 DUL. #2 @ 4 ⊑″	1-#3 DUL #2 @ 4 5″							
	70 nef		#3 @ 4.5	#3 @ 4.5							
	70 psi	6223.6	1-#5 hot	1-#5 hot							
		0223.0	#3 @ 1 5"	1-#3 D0L #3 @ 1 5″							
(30 feet)	30 nsf		1-#5 ton	1-#5 ton							
(001001)	00 por	5765 7	1-#5 hot	1-#5 hot							
		0100.1	#3 @ 4 5"	#3 @ 4 5"							
	50 nsf		1-#5 ton	1-#5 ton							
	00 poi	6643.0	1-#5 hot	1-#5 hot							
		0010.0	#3 @ 4 5"	#3 @ 4 5"							
	70 nsf		1-#5 top	10 0 1.0							
	poi	7520.4	1-#5 hot.								
			#3 @ 4.5"								
(35 feet)	30 psf		1-#5 top	1-#5 top							
(· · · · ·	6254.7	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
	50 psf		1-#5 top								
	P	7228.5	1-#5 bot.								
			#3 @ 4.5"								
	70 psf		1-#5 top								
	·	8202.3	1-#5 bot.								
			#3 @ 4.5″								
(40 feet)	30 psf		1-#5 top								
. /	· ·	6964.1	1-#5 bot.								
			#3 @ 4.5″								
	50 psf		1-#5 top								
		8069.5	1-#5 bot.								
			#3 @ 4.5"								
	70 psf		1-#5 top								
		9174.9	1-#5 bot.								
			#3 @ 4.5"								



Lintel Width = 6" Lintel Depth = 12" Effective Depth = 9.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar #3 @ 4.5" = use one #3 stirrup @ 4.5" O/C

FI O	0				Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls		
Floor Clear	Ground snow	Iotal Factored	Load Carrying Second Storey ICF + Light Frame Root Load Lintel Span - Feet									
Span	IDad	Uniform Load	2 #	4 #	E #	6.#	Lintel Span - Fee	0 #	0.#	10.#	11 #	
(10 feet)	20 nsf	IDS/IL	3 II 1-#5 ton	4 IL 1-#5 ton	3 IL 1-#5 ton	0 IL 1-#5 ton	1.#5 ton	0 IL 1-#5 ton	9 IL 1-#6 ton	1-#6 ton	2-#5 ton	
(10 1661)	50 psi	2844.6	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	
		2044.0	no stirruns	#3@65"	#3@65"	#3@65"	#3@65"	#3@65"	#3@65"	#3@65"	2#3@65"	
	50 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	2-#5 ton	2 // 0 @ 0.0	
	00 por	3160.4	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot		
		0100.4	no stirruns	#3@65"	#3 @ 6 5"	#3@65"	#3@65"	#3@65"	#3@65"	#3@65"		
	70 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	1-#6 ton	//0 @ 0.0		
	10 por	3476.2	1-#5 bot	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot			
		0110.2	no stirruns	#3@65"	#3 @ 6 5"	#3@65"	#3@65"	#3@65"	#3@65"			
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top			
()		3447.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.			
		•••••	no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top				
		3895.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
		4342.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top				
· · /		4157.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		4736.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top						
		5315.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"						
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		4850.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"					
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top						
		5552.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"						
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top						
		6254.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"						
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top						
		5796.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.						
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"						
	50 psf		1-#5 top	1-#5 top	1-#5 top							
		6673.6	1-#5 bot.	1-#5 bot.	1-#5 bot.							
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
	70 psf		1-#5 top	1-#5 top	1-#5 top							
		7550.9	1-#5 bot.	1-#5 bot.	1-#5 bot.							
(05.6.1)			#3 @ 6.5	#3 @ 6.5"	#3 @ 6.5"							
(35 feet)	30 pst	0005.0	1-#5 top	1-#5 top	1-#5 top							
		6285.3	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.							
	50(#3@6.5	#3 @ 6.5	#3@6.5							
	50 pst	7050 4	1-#5 top	1-#5 top	1-#5 TOP							
		/209.1	1-#3 DOL.	1-#0 DOL.	1-#0 DOL.							
	70 nof		#3@0.0	#3 @ 0.0	#3 @ 0.0							
	ro psi	8333.0	1-#5 bot	1-#0 LUP	1-#5 bot							
		0232.9	1=#0 DUL #3 @ 6 5.″	1~#JUUL. #2 @ ⊆ ⊑″	1=#JUUL. #3@⊆⊑‴							
(AD feet)	30 nef		#0 \U 0.0 1_#5 ton	#J & 0.3	#0 @ 0.0 1_#5 ton							
(40 1661)	00 h91	a 1003	1-#5 hot	1-#5 hot	1-#5 hot							
		0534.0	1-#3 DUL. #3 @ 6 5″	1-#J DUL. #3 @ 6 5″	1-#JUUL. #3@65″							
	50 nef		#0 ⊌ 0.0 1-#5 ton	#0 ₩ 0.0 1-#5 ton	#0 ⊌ 0.0 1-#5 ton							
	00 hai	8100.1	1-#5 hot	1-#5 hot	1-#5 hot							
		0100.1	#3@65″	#3@65"	#3@65″							
	70 nef		#0 © 0.0 1-#5 ton	#3 ⊛ 0.3 1-#5 ton	<i>π</i> υ ⊛ 0.0							
	10 por	9205 5	1-#5 hot	1-#5 hot								
		0200.0	#3 @ 6.5"	#3 @ 6.5"								



Lintel Width = 6″ Lintel Depth = 16″ Effective Depth = 13.75″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#7 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" 0/C

 * check applicability limits table A1.3 in appendix A to use this chart

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Span - Feet										
Span	load	Uniform Load					Lintel Span - Fee	t					
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft		
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		2875.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	50 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top		
		3191.0	1-#5 bot.	1 <i>-</i> #5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"		
	70 pst		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3506.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@7"		
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3478.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@7"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top		
		3925.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.		
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@7"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#6 top		
		4373.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″		
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top		
		4187.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	2-#3@7″		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4766.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5345.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″	2-#3@7″		
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top		
		4881.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5582.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7"		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	1-#9 top		
		6284.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#9 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	#3 @ 7″	#3 @ 7″		
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		5826.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#9 top		
		6704.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.		
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7"	2-#3 @ 7"	#3 @ 7″		
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#8+1-#5 top			
		7581.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8+1-#5 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	1-#8 top			
		6315.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 7"	#3 @ 7″	#3 @ 7″			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top			
		7289.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7"			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#6 top	1-#8+1-#5 top			
		8263.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top			
		7025.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7″			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1-#6 top	2-#5 top	2-#6 top	1-#8+1-#5 top			
		8130.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.			
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top				
		9236.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.				
			#3 @ 8.5"	#3 @ 8.5″	#3 @ 8.5″	#3 @ 7″	2-#3 @ 7"	#3 @ 7″	2-#3 @ 7"				





Lintel Width = 6" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" 0/C

Floor Clear Snan	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Span - Feet										
feet	nef	lhs/ft	12 ft	13 ft	14 ft	15 #	16 ft	. 17 #	18 ft	19 ft	20 ft			
(10 feet)	30 nsf	103/11	2-#5 ton	2-#5 ton	1-#8 ton	2-#6 ton	1-#9 ton	17 10	TOR	15 11	20 11			
(101000)	00 por	2875 1	2-#5 hot	2-#5 hot	1-#8 hot	2-#6 hot	1-#9 hot							
		201011	2-#3@85"	2-#3@85"	#3 @ 8 5"	2-#3 @ 7"	#3 @ 7"							
	50 nsf		2-#5 ton	1-#8 ton	1-#8 ton	2-#6 top	1-#8+1-#5 ton							
		3191.0	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.							
			2-#3 @ 8.5"	#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"							
	70 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top								
		3506.8	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.								
			2-#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	#3 @ 7″								
(15 feet)	30 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top								
		3478.3	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.								
			2-#3 @ 8.5"	#3 @ 7″	2-#3 @ 7"	#3 @ 7″								
	50 psf		1-#8 top	2-#6 top	1-#9 top									
		3925.7	1-#8 bot.	2-#6 bot.	1-#9 bot.									
			#3 @ 7″	2-#3 @ 7"	#3 @ 7″									
	70 psf		1-#8 top	1-#9 top										
		4373.1	1-#8 bot.	1-#9 bot.										
			#3 @ 7″	#3 @ 7'										
(20 feet)	30 psf		1-#8 top	2-#6 top	1-#8+1-#5 top									
		4187.7	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.									
			#3 @ 7″	2-#3@7"	2-#3@7"									
	50 pst		2-#6 top	1-#8+1-#5 top										
		4766.7	2-#6 bot.	1-#8+1-#5 bot.										
	70(2-#3 @ 7"	2-#3 @ 7"										
	70 pst	5045 7	1-#9 top											
		5345.7	1-#9 DOL.											
(25 foot)	20 nof		#3 @ /	1 #0.1 #5 top										
(20 1661)	30 þsi	4001.0	2=#0 t0p	1 #0,1 #5 bot										
		4001.0	2-#0 DUL. 2_#3 @ 7″	2_#2 @ 7″										
	50 psf		1-#9 top	21001										
		5582.9	1-#9 bot.											
			#3 @ 7″											
	70 psf													
		6284.7												
(30 feet)	30 psf													
		5826.9												
	50 psf													
		6704.2												
	70 pst	7504 5												
		/581.5												
(25 foot)	20 nof													
(33 1661)	30 psi	6315.8												
		0313.0												
	50 nsf													
	00 por	7289.6												
		1200.0												
	70 psf													
		8263.5												
(40 feet)	30 psf													
		7025.2												
	50 psf													
		8130.6												
	70 psf	007												
		9236.0												



Lintel Width = 6° Lintel Depth = 20° Effective Depth = 17.5° F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#9 top = top rebar 1-#9 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof									
Span	load	Uniform Load	Lintel Span - Feet									
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft	
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	
		2905.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	
		3221.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	
		3537.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	
		3508.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	
		3956.2	1-#6 bot.	1 <i>-#</i> 6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	
		4403.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	
(00 ()	00 <i>(</i>		no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3@10.5"	
(20 feet)	30 pst		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	
		4218.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3@10.5"	
	50 pst	(707.0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	
		4797.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	
	70		no stirrups	no stirrups	#3@10.5	#3@10.5	#3 @ 10.5	#3@10.5	#3 @ 10.5	#3 @ 10.5	2-#3@10.5	
	70 psr	5070.0	1-#6 top	1-#0 top	1-#6 top	2-#5 top	2-#5 top					
		53/6.Z	1-#6 DOL	1-#6 DOL	1-#0 DOL.	I-#0 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#0 DOL.	2-#5 DOL	
(OE feet)	20 pof		1 #C top	no surrups	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3@8.5	
(20 leet)	30 psi	4011.5	1-#0 l0p	1-#0 LUP	1-#0 LUP	1-#0 LOP	1-#0 LUP	1-#0 LUP	1-#0 LUP	1-#0 LUP	2-#5 l0p	
		4911.0	I-#0 UUL	I-#0 UUL	1-#0 DUL.	1-#0 DUL. #0 @ 10 5"	1-#0 DUL. #2 @ 10 E″	1-#0 UUL. #2 @ 10 5″	1-#0 UUL.	1-#0 DUL.	2-#0 DUL.	
	50 nef		1.#6 top	1-#6 top	#3 @ 10.3	#3 @ 10.5	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	2=#3 @ 10.3	
	50 hsi	E612 A	1 #6 hot	1 #6 hot	1 #6 hot	1 #6 hot	1 #6 bot	1 #6 hot	1 #6 hot	2 #5 top	1 #0 top	
		3013.4	no stirrups	1-#0 DUL. #2 @ 10 5″	1-#0 DUL. #2 @ 10 5″	1°#0 DUL #2 @ 10 5″	1-#0 DUL. #2 @ 10 5″	1°#0 DOL. #2 @ 10 5″	1-#0 DUL #2 @ 10 5″	2=#J DUL. 0 #2 @ 10 5″	1=#0 DUL. #2 @ 0 ⊑″	
	70 nef		1.#6 top	#3 @ 10.3	#3 @ 10.3	#3 @ 10.5	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	2=#3 @ 10.3 2_#5 top	#3 @ 0.3	
	70 psi	6315.0	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#5 hot	1-#0 top	
		0010.2	no stirruns	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2.#3 @ 10.5"	2#3 @ 8 5"	#3@85"	
(30 feet)	30 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	1-#8 ton	
(001000)	00 por	5857 4	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 bot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#8 hot	
		000711	no stirruns	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2-#3@85"	#3 @ 8 5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	
		6734.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	
		7612.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#8 top	
		6346.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	
		7320.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#8+1-#5 top	
		8294.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	
		7055.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 8.5″	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top	1-#8+1-#5 top	
		8161.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.	
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top	2-#6 top		
		9266.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.		
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"		



Lintel Width = $6^{"}$ Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar 2-#3 @ 10.5" = use two #3 stirrups @ 10.5" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc ng Second S	ement for Li torey ICF + L	ntels in Load ight Frame I	Bearing Wa Roof	lls	
Span	load	Uniform Load					Lintel Span - Fee	t			
feet	psf	lbs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf		1-#6 top	2-#5 top	2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top		
		2905.7	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.		
	F0 =={		#3 @ 10.5	2-#3@10.5	2-#3@10.5	#3 @ 10.5	#3 @ 10.5	2-#3@8.5	2-#3@8.5		
	ou psi	2001 E	1-#6 top	2-#0 top	2-#5 top	1-#8 LOP	2-#6 t0p	1-#8+1-#3 LOP	1-#8+1-#3 top		
		3221.0	1-#0 UUL. #2 @ 10.5"	2-#0 UUL. 0 #0 @ 10 5″	2-#3 DUL. 2 #2 @ 10 5″	1-#0 DUL. #2 @ 10 5"	2-#0 DUL.	1-#0+1-#3 UUL.	1-#0+1-#3 DUL.		
	70 nsf		#3 @ 10.5 2-#5 ton	2-#5 @ 10.5	2-#3@10.5 1-#8 ton	#3 @ 10.5	2-#6 ton	2-#3 @ 0.5 1-#8±1-#5 ton	2*#3 @ 0.5		
	10 por	3537.3	2-#5 bot	2-#5 hot	1-#8 hot	1-#8 hot	2-#6 hot	1-#8+1-#5 bot			
		000110	2-#3@10.5"	2-#3@10.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
(15 feet)	30 psf		2-#5 top	2-#5 top	1-#8 top	2-#6 top	2-#6 top	1-#8+1-#5 top			
. ,		3508.8	2-#5 bot.	2-#5 bot.	1-#8 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.			
			2-#3 @ 10.5"	2-#3 @ 10.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	50 psf		2-#5 top	1-#8 top	1-#8 top	2-#6 top	1-#8+1-#5 top				
		3956.2	2-#5 bot.	1-#8 bot.	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.				
			2-#3 @ 10.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
	70 psf		2-#5 top	1-#8 top	2-#6 top	1-#9 top					
		4403.7	2-#5 bot.	1-#8 bot.	2-#6 bot.	1-#9 bot.					
(00 (cot))	00(2-#3 @ 10.5	#3 @ 8.5	2-#3@8.5	1#3 @ 8.5					
(20 teet)	30 psr	1010.0	2-#5 LOP	1-#8 top	2-#6 top	1-#9 t0p					
		4210.2	2=#3 JUL. 2_#3 @ 10 5″	1-#0 DUL. #3 @ 8 5″	2=#0 DUL. 2_#2 @ 8.5"	1#3 @ 8 5″					
	50 nsf		2-#3 @ 10.3	2-#6 ton	2-#3 @ 0.5	1#3 @ 0.3					
	00 por	4797.2	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.						
			#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						
	70 psf		1-#8 top	2-#6 top	1-#8+1-#5 top						
		5376.2	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.						
			#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						
(25 feet)	30 psf		1-#8 top	2-#6 top	1-#8+1-#5 top						
		4911.5	1-#8 bot.	2-#6 bot.	1-#8+1-#5 bot.						
			#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"						
	50 pst		2-#6 top	1-#8+1-#5 top							
		5613.4	2-#6 DOT.	1-#8+1-#5 DOL							
	70 ncf		2-#3 @ 8.5	2-#3 @ 8.5							
	70 µ31	6315.2	2-#6 hot	1-#8±1-#5 hot							
		0010.2	2-#3@85"	2-#3@85"							
(30 feet)	30 psf		2-#6 top	1-#8+1-#5 top							
· · ·		5857.4	2-#6 bot.	1-#8+1-#5 bot.							
			2-#3 @ 8.5"	2-#3 @ 8.5"							
	50 psf		1-#8+1-#5 top								
		6734.7	1-#8+1-#5 bot.								
			2-#3 @ 8.5"								
	/U pst	7040.0									
		/612.0									
(35 feet)	20 ncf		2_#6 top								
(55 1661)	50 psi	6346.4	2-#6 hot								
		0010.1	2-#3 @ 8.5"								
	50 psf		1-#8+1-#5 top								
		7320.2	1-#8+1-#5 bot.								
			2-#3 @ 8.5"								
	70 psf										
		8294.0									
			1 10 1								
(40 feet)	30 psf	7055 7	1-#8+1-#5 top								
		/055./	1-#ö+1-#5 bot.								
	50 pcf		2-#3 @ 8.5								
	ou hai	8161.2									
		0101.2									
	70 psf										
	P .	9266.6									



Lintel Width = 6" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#9 top = top rebar 1-#9 bot.= bottom rebar

2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C



Floor Clear	Ground snow	Total Factored		Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Span - Feet										
Span	load	Uniform Load					Lintel Span - Fee	t						
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft			
(10 teet)	30 pst	0101.0	1-#5 TOP	1-#5 top	1-#5 top	1-#5 tOp	1-#6 top							
		3191.2	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5 DOL.	1-#b DOT.							
	E0 nof		#3 @ 3./5	#3 @ 3./5	#3 @ 3./5	#3@ 3.75	#3 @ 3./5							
	ou hai	2507.0	1-#0 l0p	1-#0 l0p	1-#0 LUP	1-#0 LOP	2-#5 l0p							
		3007.0	1-#3 DUL. #2 @ 0.75″	1-#0 DUL.	1-#3 DOL. #3 @ 3 75"	1-#0 DUL.	2-#0 DOL.							
	70 nof		#3 @ 3./3	#3 @ 3./3	#3@ 3./3	#3@ 3.73	2-#3@3.13							
	70 µ31	3822.0	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot								
		0022.0	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"								
(15 feet)	30 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#6 top								
(,		3794.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.								
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"								
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top								
		4241.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.								
			#3 @ 3.75″	#3 @ 3.75″	#3 @ 3.75″	#3 @ 3.75"								
	70 psf		1-#5 top	1-#5 top	1-#6 top									
		4689.2	1-#5 bot.	1-#5 bot.	1-#6 bot.									
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"									
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top									
		4503.7	1-#5 bot.	1-#5 bot.	1-#5 bot.									
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"									
	50 psf		1-#5 top	1-#5 top	1-#6 top									
		5082.8	1-#5 bot.	1-#5 bot.	1-#6 bot.									
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"									
	70 psf		1-#5 top	1-#5 top										
		5661.8	1-#5 bot.	1-#5 bot.										
(05.6.1)			#3 @ 3.75"	#3 @ 3.75"	0.051									
(25 feet)	30 pst	5407.4	1-#5 top	1-#5 top	2-#5 top									
		5197.1	1-#3 DOL.	1-#0 DOL.	2-#5 DOL									
	50 pcf		#3 @ 3./5	#3 @ 3./5	2-#3@3.75									
	50 hsi	5808.0	1-#5 top	1-#5 top										
		0000.0	#3 @ 3 75"	#3 @ 3 75"										
	70 nsf		1-#5 ton	1-#5 ton										
		6600.8	1-#5 bot.	1-#5 bot.										
			#3 @ 3.75"	#3 @ 3.75"										
(30 feet)	30 psf		1-#5 top	1-#5 top										
		6142.9	1-#5 bot.	1-#5 bot.										
			#3 @ 3.75"	#3 @ 3.75″										
	50 psf		1-#5 top	2-#4 top										
		7020.2	1-#5 bot.	2-#4 bot.										
			#3 @ 3.75"	2-#3 @ 3.75"										
	70 psf		1-#5 top											
		7897.6	1-#5 bot.											
(05.6.1)	00(#3 @ 3.75	4.051										
(35 TEET)	30 pst	0.001	1-#5 TOP	1-#5 top										
		0031.9	1-#3 DOL.	1-#0 DOL.										
	50 pcf		#3 @ 3./3	#3@3./5										
	50 hsi	7605 7	1-#5 top											
		1005.1	#3 @ 3 75"											
	70 nsf		1-#5 ton											
	. o por	8579.5	1-#5 bot.											
		00.010	#3 @ 3.75"											
(40 feet)	30 psf		1-#5 top											
(· ·····/		7341.3	1-#5 bot.											
			#3 @ 3.75″											
	50 psf		1-#5 top											
		8446.7	1-#5 bot.											
			#3 @ 3.75"											
	70 psf		1-#5 top											
		9552.1	1-#5 bot.											
			#3 @ 3.75"											



Lintel Width = 8" Lintel Depth = 10" Effective Depth = 7.75" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 3.75" = use two #3 stirrups @ 3.75" O/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc ng Second S	ement for Li	ntels in Load	Bearing Wa	lls	
Span	load	Uniform Load			Garry	ing decond d	Lintel Span - Fee	t in the second s	1001		
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#6+1-#5 top		
		3211.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.		
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		3527.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		3843.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"			
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top			
		3814.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.			
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"			
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	1 <i>-#</i> 6 top				
		4262.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"				
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		4709.6	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		4524.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top					
		5103.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"					
	70 pst	5000.0	1-#5 top	1-#5 top	1-#5 top						
		5682.2	1-#5 bot.	1-#5 bot.	1-#5 bot.						
(05.6)	00(#3@4.5	#3@4.5	#3 @ 4.5	4 10 4 14 1					
(25 teet)	30 pst	5047.5	1-#5 top	1-#5 TOP	1-#5 top	1-#5+1-#4 top					
		5217.5	1-#5 DOT.	1-#5 DOT.	1-#5 DOT.	1-#5+1-#4 DOT.					
	E0 nof		#3@4.5	#3@4.5	#3 @ 4.5	2-#3 @ 4.5					
	50 psr	5010.0	1-#5 top	1-#0 top	1-#5 top						
		5919.3	1-#5 DOL.	1-#5 DOL.	1-#5 DOL.						
	70 nof		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3						
	70 psi	6621.2	1-#5 top	1-#5 top	1-#6 hot						
		0021.2	1-#3 D0L #3 @ 4 5″	1-#3 D0L #3 @ / 5″	1-#0 D0L. #3 @ 1 5″						
(30 feet)	30 nsf		1-#5 ton	1-#5 ton	1-#6 ton						
(001000)	00 por	6163.3	1-#5 bot	1-#5 hot	1-#6 hot						
		0100.0	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"						
	50 psf		1-#5 top	1-#5 top							
		7040.6	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
	70 psf		1-#5 top	1-#5 top							
		7917.9	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5+1-#4 top						
		6652.3	1-#5 bot.	1-#5 bot.	1-#5+1-#4 bot.						
			#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"						
	50 psf		1-#5 top	1-#5 top							
		7626.1	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5″	#3 @ 4.5″							
	70 psf		1-#5 top	1-#5 top							
		8599.9	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
(40 feet)	30 psf		1-#5 top	1-#5 top							
		7361.7	1-#5 bot.	1-#5 bot.							
	L		#3 @ 4.5"	#3 @ 4.5"							
	50 psf	A 1/2 - 1	1-#5 top	1-#5 top							
		8467.1	1-#5 bot.	1-#5 bot.							
	70 (#3 @ 4.5"	#3 @ 4.5"							
	70 pst	0570.5	1-#5 top	1-#5+1-#4 top							
		9572.5	1-#5 bot.	1-#5+1-#4 bot.							
			#3 @ 4.5"	2-#3 @ 4.5"							



Lintel Width = 8″ Lintel Depth = 12″ Effective Depth = 9.75″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

Floor Clear	Ground snow	rotal Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof										
Span	load	Uniform Load				Li	ntel Span - Fe	et					
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft	12 ft	13 ft
(10 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1#6 top
		3252.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#6 bot.
	50 pcf		no stirrups	#3@b.5	#3 @ b.5	#3 @ b.5	#3@b.5	#3 @ b.5	2-#3@b.5	2-#3@0.5	2-#3@b.5	2-#3@b.5	2-#3@b.5
	ou hei	3568.0	1-#3 LUP 1-#5 hot	1-#5 LOP	1-#5 top 1-#5 hot	1-#5 top 1-#5 hot	1-#5 top	1-#6 hot	2-#5 top 2-#5 hot	2-#5 top 2-#5 hot	1-#0+1-#0 LUP	2-#0 LUP 2-#6 hot	
		JJUU.2	no etirrune	#3 @ 6 5"	1-#J DUL. #3 @ 6 5″	1-#J DUL #3 @ 6 5″	1-#J DUL #3 @ 6 5″	1-#0 D0L #3 @ 6 5″	2-#3 @ 6 5"	2-#3 @ 6.5"	1-#0+1-#5 D0L 2_#3 @ 6 5″	2-#3 @ 6 5″	
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2 //0 @ 0.0	
		3884.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.		
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"		
(15 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top		
		3855.5	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.		
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		4302.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
	70(#3@6.5"	#3@6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3@6.5"				
	70 psi	4750.0	1-#5 LOP	1-#5 t0p	1-#5 t0p	1-#5 t0p	1-#0 top	1-#0 LOP	2-#5 t0p				
		4700.5	1-#0 DUL. #2 @ 6 5″	1-#3 DUL. #3 @ 6 5″	1-#0 DUL. #2 @ 6 5″	1-#0 DOL. #2 @ 6 5″	1=#0 DUL #2 @ 6 5″	1-#0 JUL. #2 @ 6 5″	2-#0 DUL. 0.#2 @ 6.5″				
(20 feet)	30 nef		#3 @ 0.5 1_#5 ton	#3 @ 0.3 1_#5 ton	#3 @ 0.5 1₌#5 ton	#3 @ 0.3 1-#5 ton	#3 @ 0.5 1_#6 ton	#3 @ 0.5	2=#3 @ 0.3 2=#5 ton				
(20 1001)	00 001	4564 9	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 bot	2-#5 hot				
		100 1.0	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3@6.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		5143.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"					
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		5722.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"					
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		5258.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
	50 pcf		#3@0.0	#3@0.0	#3 @ 0.0	#3 @ 0.0	#3@0.0	2-#3 @ 0.5					
	20 h2i	5960 1	1-#5 top 1-#5 hot	1-#5 top	1-#5 top	1-#5 top							
		5500.1	#3@65"	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"							
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top							
		6661.9	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top							
		6204.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
	50 psf	7001 1	1-#5 top	1-#5 top	1-#5 top	1-#6 top							
		/081.4	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.							
	70 nof		#3@0.0	#3@0.0	#3 @ 0.0	#3 @ 0.0							
	70 µSi	7958 7	1-#5 top 1-#5 hot	1-#5 top	1-#5 top	1-#6 hot							
		1000.1	#3@65"	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"							
(35 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top							
()		6693.0	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 6.5″	#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"							
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top							
		7666.8	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.							
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"							
	70 psf		1-#5 top	1-#5 top	1-#5 top								
		8640.7	1-#5 bot.	1-#5 bot.	1-#5 bot.								
(10 faat)	20 nof		#3@6.5	#3 @ 6.5	#3 @ 6.5	1_#5_1 1 #4 ton							
(40 Teet)	ou psi	7/02 /	1-#3 LOP 1-#5 hot	1-#0 LOP 1-#5 hot	1-#5 LOP 1-#5 hot	1-#3+1-#4 LOP 1-#5+1-#4 bot							
		1402.4	#3 @ 6 5"	1-#3 DUL #3 @ 6 5″	1-#JUUL #3@65″	י-#טדוי#4 טטו. 2-#10 @ 6 5″							
	50 nsf		1-#5 ton	1-#5 ton	1-#5 top	2 # 10 @ 0.0							
	po.	8507.8	1-#5 bot.	1-#5 bot.	1-#5 bot.								
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5″								
	70 psf		1-#5 top	1-#5 top	1-#6 top								
		9613.2	1-#5 bot.	1-#5 bot.	1-#6 bot.								
			#3 @ 6.5″	#3 @ 6.5″	#3 @ 6.5″								



c)

8″

Lintel Width = 8″ Lintel Depth = 16″ Effective Depth = 13.6″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" O/C

Floor Clear	Ground snow	Total Factored			Minim	um Reinford	ement for Li	ntels in Load	Bearing Wa	lls	
Span	load	Uniform Load			Carry	ng occona e	Lintel Span - Fee	t	1001		
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
· /		3293.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3608.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1 <i>-#</i> 6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3924.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3896.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1 <i>-</i> #6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		4343.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top
		4791.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 # 8.5"
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1 <i>-#</i> 6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top
		4605.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 # 8.5"
	50 pst		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top
		5184.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.
	70(no stirrups	#3 @ 8.5	#3 @ 8.5	#3@8.5	#3 @ 8.5	#3 @ 8.5	2-#3@8.5	2-#3@8.5	2-#3 # 8.5
	70 pst	5700 7	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		5/63.7	1-#6 DOT.	1-#6 DOT.	1-#b DOT.	1-#6 DOT.	1-#6 DOT.	1-#b DOT.	2-#5 DOT.	1-#6+1-#5 DOL	2-#6 DOT.
(0E feet)	20 pof		no stirrups	#3 @ 8.5	#3 @ 8.5	#3@8.5	#3 @ 8.5	#3 @ 8.5	2-#3 @ 8.5	2-#3 # 8.5	2-#3@/
(25 Teet)	30 psr	5000.0	1-#0 top	1-#0 top	1-#6 top	1-#6 top	1-#0 top	1-#6 top	2-#0 top	1-#6+1-#5 LOP	1-#0+1-#0 LOP
		5299.0	I-#0 UUL	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	1-#0 UUL.	1-#0 DUL.	2-#3 UUL.	1-#0+1-#0 UUL	1-#0+1-#0 DUL.
	50 nsf		1-#6 ton	#3@0.5	#3@0.5	#3@0.5	#3@0.5	#3@0.5	2=#3 @ 0.3	2=#3 # 0.J	2=#3 # 0.3 2=#6 ton
	50 psi	6000.8	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#6+1-#5 hot	2-#6 hot
		0000.0	no stirruns	#3@85"	#3@85"	#3 @ 8 5"	#3 @ 8 5"	#3@85"	2#3@85"	2-#3 # 8 5"	2 #0 00t. 2-#3 @ 7"
	70 nsf		1-#6 ton	1-#6 top	1-#6 ton	1-#6 top	1-#6 top	2-#5 ton	1-#6+1-#5 top	2-#6 ton	1-#8+1-#5 top
	10 por	6702 7	1-#6 bot	1-#6 hot	1-#6 hot	1-#6 bot	1-#6 bot	2-#5 hot	1-#6+1-#5 bot	2-#6 hot	1-#8+1-#5 bot
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5″	2-#3@7"	2-#3@7″
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
``´´		6244.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		7122.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top
		7999.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		6733.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3@7"	2-#3@7"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1 <i>-#</i> 6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#6 top
		7707.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#6 bot.
	70(#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3 @ 7"	2-#3@7"	2-#3@7"
	/U pst	0001.4	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	2-#8 top
		8681.4	1-#6 bot.	1-#6 DOT.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#ö+1-#5 bot.	2-#8 bot.
(40 41)	20		#3@8.5	#3 @ 8.5	#3 @ 8.5	#3@8.5	2-#3 @ 8.5	2-#3@/	2-#3 @ /	2-#3@/	2-#3@/
(40 1001)	ou psi	7440.0	1 #6 bot	1-#0 LOP	1-#0 LOP	1 #6 bot	2-#0 LOP	2-#0 LOP	1 #6,1 #5 bot	2=#0 LOP	1-#0+1-#0 LUP
		1443.Z	1=#0 DUL #2 @ 0 ⊑″	1-#0 DOL. #2 @ 0 5"	1-#0 DOL. #2 @ 0 5 "	1-#0 DOL. #2 @ 0 E"	∠-#0 DUL. 0 #2 @ 0 ⊑″	2-#3 DOL.	1-#0+1-#3 DUL 0 #0 @ 7″	2-#0 DOL 0 #0 @ 7″	1-#0+1-#0 DU(. 0 #0 ⊛ 7″
	50 pef		#0 ⊌ 0.0 1_#6 ton	#J & 0.3	#J & 0.J	#0 ⊌ 0.0 1_#6 ton	2=#3 @ 0.3 2_#5 ton	2*#0 ₩ 0.0 1_#6±1_#5 top	2=#3 ₩ 1 2_#6 ton	∠*#3 \ / 1_#8⊥1_#5 top	2=#3 ₩ 1 2_#8 ton
	oo hai	8548.6	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 top	1-#6±1-#5 hot	2-#0 t0p 2-#6 hot	1-#8±1-#5 hot	2-#8 hot
		0070.0	#3 @ 8 5"	#3@ 8 5"	#3 @ 2 5"	#3 @ 8 5"	2 #3 @ 8 5"	2_#3 @ 7″	2.#3 @ 7"	2_#3 @ 7″	2.#3 @ 7″
	70 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 ton
		9654.0	1-#6 bot.	1-#6 bot.	1-#6 hot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot	1-#8+1-#5 hot	1-#8+1-#6 hot	2-#8 bot.
			#3 @ 8.5″	#3 @ 8.5″	#3 @ 8.5″	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"





Lintel Width = 8" Lintel Depth = 20" Effective Depth = 17.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C"

					Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls	
Floor Clear	Ground snow	Total Factored			Carryi	ng Second S	torey ICF + L	ight Frame I	Roof		
Spall	nef	UIIIUIIII LUAU Ihe/ft	12 ft	13 ft	14 ft	15 #	16 ft	17 ft	18 ft	10 ft	20 ft
(10 feet)	30 nsf	103/11	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 ton	2-#8 ton	1-#9+1-#8 ton	2-#9 ton
(101000)	00 por	3293.1	2-#5 bot.	1-#6+1-#5 bot.	2-#6 hot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 hot.
			2-#3 @ 8.5"	2-#3 # 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"
	50 psf		2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top
		3608.9	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7″	2-#3 @ 7"
	70 psf		1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	
		3924.8	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			2-#3 # 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	
(15 feet)	30 psf		1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	
		3896.2	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
	50 auf		2-#3 # 8.5	2-#3@8.5	2-#3@8.5	2-#3@7	2-#3@7	2-#3@7	2-#3@7	2-#3 @ 7	
	ou psr	40.40.6	1-#0+1-#0 LOP	2-#0 top	1-#8+1-#3 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top		
		4343.0	1-#0+1-#0 DUL.	2-#0 UUL.	1-#0+1-#5 DUL 0 #2 @ 7"	2-#0 UUL. 0 #2 @ 7"	2-#0 UUL. 2 #2 @ 7″	1-#9+1-#0 UUL. 0 #2 @ 7"	2-#9 DUL 2 #2 @ 7″		
	70 nsf		2-#6 ton	2-#3 @ 0.5 1-#8±1-#5 ton	2-#3 @ 7 1-#8±1-#5 ton	2-#8 ton	2-#3 @ / 1-#9±1-#8 ton	2-#3@7 2-#9 ton	2-#3 @ 1		
	10 001	4791 1	2-#6 hot	1-#8+1-#5 bot	1-#8+1-#5 hot	2-#8 hot	1-#9+1-#8 hot	2-#9 hot			
			2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7"			
(20 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#5 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
. ,		4605.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#5 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
	50 psf		2-#6 top	1-#8+1-#6 top	2-#8 top	2-#8 top	2-#9 top				
		5184.6	2-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
	70 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		5763.7	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
(05.6.1)			2-#3@7"	2-#3@7"	2-#3@7"	2-#3@7"	2-#3@7"				
(25 feet)	30 pst	5000.0	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		5299.0	1-#8+1-#3 DOL	1-#8+1-#0 DOL	2-#8 DOL	1-#9+1-#8 DOL	2-#9 DOL.				
	50 nef		2-#3 @ / 1_#8.1_#5 top	2-#3 @ / 2-#8 top	2-#3 @ / 1_#0+1_#8 ton	2-#3 @ 7	2-#3 @ 1				
	50 psi	6000.8	1-#8+1-#5 hot	2-#8 hot	1-#0+1-#8 hot	2-#9 top 2-#9 hot					
		0000.0	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"					
	70 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	21001					
		6702.7	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.						
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"						
(30 feet)	30 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		6244.8	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"					
	50 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
		7122.1	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
	70		2-#3 @ 7	2-#3@/	2-#3@7						
	70 psi	7000 4	2-#0 lUp 2 #8 hot	1 #0.1 #0 lop							
		1333.4	2-#0 DUL 2-#3 @ 7″	2_#3 @ 7"							
(35 feet)	30 nsf		1-#8+1-#6 top	2-#8 ton	1-#9+1-#8 ton						
(001000)	00 por	6733.8	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.						
			2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"						
	50 psf		2-#8 top	1-#9+1-#8 top							
		7707.6	2-#8 bot.	1-#9+1-#8 bot.							
			2-#3 @ 7"	2-#3 @ 7"							
	70 psf		1-#9+1-#8 top	2-#9 top							
		8681.4	1-#9+1-#8 bot.	2-#9 bot.							
			2-#3 @ 7"	2-#3@7″							
(40 feet)	30 psf		2-#8 top	1-#9+1-#8 top							
		/443.2	2-#8 bot.	1-#9+1-#8 bot.							
	E0 not		2-#3 @ /	2-#3@/							
	ou hai	85/12 G	1-#0±1-#9 hot	2=#3 LUP 2=#0 hot							
		0040.0	1.770 JUL 2-#3 @ 7″	2-#3 DUL 2-#3 @ 7″							
	70 nsf		2-#9 top	210 10							
	. o poi	9654.0	2-#9 hot.								
			2-#3 @ 7"								



Lintel Width = 8″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C"

Floor Clear	Ground snow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	lls	
Span	load	Uniform Load			ourry	ng occona e	Lintel Span - Fee	et			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3333.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3649.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3965.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
(15 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top
		3937.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4384.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4831.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
(20 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		4646.4	1-#6 bot.	1 <i>-#</i> 6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
			no stirrups	no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		5225.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3@10.5"	#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"
	70 pst	5004.4	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top
		5804.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.
(05 (+++))	00		no stirrups	#3 @ 10.5	#3@10.5	#3@10.5	#3@10.5	#3@10.5	#3 @ 10.5	2-#3@10.5	2-#3@10.5
(25 feet)	30 pst	5000 7	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top
		5339.7	1-#6 DOT.	1-#6 DOT.	1-#b DOT.	1-#b DOT.	1-#6 DOT.	1-#6 DOT.	1-#6 DOT.	2-#5 DOT.	2-#5 DOT.
	E0 pof		1 #C top	#3 @ 10.5	#3 @ 10.5	#3@10.5	#3 @ 10.5	#3 @ 10.5	#3 @ 10.5	2-#3 @ 10.5	2-#3 @ 10.5
	ou hai	6041.6	1-#0 l0p	1-#0 LUP	1-#0 LUP	1-#0 LOP	1 #6 hot	1-#0 LUP	1-#0 LUP	2-#5 l0p	1-#0+1-#0 LUP
		0041.0	I-#0 UUL	1-#0 UUL.	1-#0 DUL.	1-#0 DUL. #0 @ 10 5"	1-#0 DUL. #2 @ 10.5″	1-#0 UUL. #2 @ 10 E″	1-#0 UUL.	2-#0 DOL.	1-#0+1-#0 DUL
	70 pcf		1 #6 top	#3 @ 10.3	#3 @ 10.3	#3 @ 10.0	#3 @ 10.3	#3 @ 10.3	#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3
	70 psi	6743.4	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 top	1-#6+1-#5 hot	1-#6+1-#5 top
		07-10.4	no stirruns	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10 5"	2.#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10 5"
(30 feet)	30 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	2-#5 ton	2 #6 € 10.0
(001000)	00 por	6285.6	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 bot	1-#6 bot	1-#6 hot	2-#5 hot	2-#5 hot	1-#6+1-#5 hot
		0200.0	no stirruns	#3 @ 10.5"	#3 @ 10 5"	#3 @ 10 5"	#3 @ 10.5"	#3 @ 10 5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		7162.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top
		8040.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		6774.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		7748.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		8722.2	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
(40 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		7483.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		8589.3	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
	70 (#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3@8.5"
	/U pst	00017	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#6 top
		9694.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	I-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#6 bot.
			#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"



Lintel Width = $8^{"}$ Lintel Depth = $24^{"}$ Effective Depth = $21.5^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C

Eleer Clear	Cround anour	Total Eastarad			Minim	um Reinforc	ement for Li	ntels in Load	Bearing Wa	ls	
Floor Clear Snan	Ground Snow	Iotal Factored			Carry	ng secona s	intel Snan - Fee	light Frame i	1001		
feet	nsf	lhs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf	120,11	2-#5 top	2-#5 top	1-#6+1-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top
. ,		3333.8	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	50 psf		2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top
		3649.7	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		2-#5 top	1-#6+1-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top
		3965.5	2-#5 bot.	1-#6+1-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.
1154.0			2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
(15 feet)	30 pst	0007.0	2-#5 top	1-#6+1-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top
		3937.0	2-#3 DOL	1-#0+1-#0 DOL	1-#0+1-#3 DOL 0.#2 @ 10.5″	2-#0 DOL.	1-#8+1-#5 DOL	1-#8+1-#3 DOL	2-#8 DOL	2-#8 DOL	1-#9+1-#8 DOL
	50 pcf		2-#3 @ 10.3	2-#3 @ 10.3	2-#3@10.3 2-#6 top	2-#3 @ 10.3 1_#8+1_#5 top	2-#3 @ 10.3	2-#3 @ 10.0 2-#8 top	2-#3 @ 0.0	2-#3 @ 0.3	2-#3 @ 0.3
	50 psi	4384.4	2-#5 hot	1-#6+1-#5 hot	2-#6 hot	1-#8+1-#5 hot	1-#8+1-#6 hot	2-#0 top 2-#8 hot	2-#8 hot	1-#0+1-#8 hot	2-#9 top 2-#9 hot
		1001.1	2-#3 @ 10.5"	2-#3@105"	2-#3 @ 10.5"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"
	70 psf		1-#6+1-#5 top	2-#6 top	2-#6 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2-#9 top
		4831.8	1-#6+1-#5 bot.	2-#6 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	2-#9 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
(20 feet)	30 psf		1-#6+1-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top
		4646.4	1-#6+1-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	50 psf		1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top	
		5225.4	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			2-#3@10.5"	2-#3@10.5"	2-#3@8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	70 pst		2-#6 top	1-#8+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top		
		5804.4	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
(25 foot)	20 nof		2-#3 @ 10.5	2-#3 @ 8.5	2-#3@8.5	2-#3 @ 8.5	2-#3 @ 8.5	2-#3 @ 8.5	2-#3 @ 8.5	2 #0 top	
(20 1001)	SU hai	5330 7	1-#0+1-#5 l0µ	2-#0 l0µ 2-#6 hot	1-#0+1-#0 l0p	1-#0+1-#0 LUP	2-#0 l0p 2-#8 hot	1-#9+1-#0 LUP	2-#9 l0p 2-#9 hot	2-#9 l0p 2-#9 hot	
		3033.1	2_#3 @ 10 5"	2-#0 D0L 2-#3 @ 10.5"	2_#3 @ 8 5"	2=#3 @ 8 5″	2-#0 D0L 2-#3 @ 8 5″	2-#3 @ 8 5″	2-#3 DUL 2-#3 @ 8.5"	2-#3 00L 2-#3 @ 8 5″	
	50 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#5 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2 10 8 0.0	2 10 8 0.0	
		6041.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#5 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	70 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		6743.4	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
(30 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		6285.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	50 pst	7400.0	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		/162.9	1-#0+1-#0 DOL	1-#8+1-#6 DOL	2-#8 DOL.	1-#9+1-#8 DOL	2-#9 DOL				
	70 pcf		2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.3	2-#3 @ 0.3	2-#3 @ 0.0				
	70 psi	8040.2	1-#8+1-#6 hot	2-#8 hot	1-#9±1-#8 hot	2-#9 top					
		0010.2	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
(35 feet)	30 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
. ,		6774.5	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
	50 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		7748.3	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
	70 psf		2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		8722.2	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
(40 44)	20		2-#3@8.5	2-#3@8.5"	2-#3@8.5"	2-#3@8.5"	0 #0 +				
(40 teet)	30 pst	7400.0	1 #0,1 #0 hot	2-#ö top 0 #0 hot	2-#8 top	1 #0,1 #0 hot	2-#9 top 2 #0 hot				
		/403.9	1=#0+1=#0 DUĹ. 2_#2 @ 0 ⊑″	∠=#0 DUL 2_#3 @ 0 ⊑″	∠-#0 DUL. ೨_#3 @ 0 ⊑″	1-#3+1-#ŏDU(. ე_#3 @ 0 ⊑″	∠-#3 DOL 2_#3 @ 0 ⊑″				
	50 nef		2*#3 € 0.3 1-#8±1-#6 ton	2-#3 ₩ 0.0 2-#8 ton	2*#3 ₩ 0.3 1-#9±1-#8 top	2-#0 ₩ 0.0 2-#0 ton	∠*#J \ 0.J				
	00 hai	8589.3	1-#8+1-#6 hot	2-#8 hot	1-#9+1-#8 hot	2-#9 hot					
		0000.0	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
	70 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
		9694.7	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						



Lintel Width = 8" Lintel Depth = 24" Effective Depth = 21.5" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	ium Reinforc	ement for Lin torey ICF + L	ntels in Load .ight Frame I	Bearing Wa Roof	lls	
Span	1020	Uniform Load	0.4	4.4	F #	6.4	Lintel Span - Fee		0.4	40.4	44.0
(10 feet)	20 pst	IDS/ft	3 ft	4 π 1 #5 top	5 Π 1 #5 top	5 Π	/π 0.#5 top	8 Π 1 #0 top	9 π	10 π	11 π
(TO Reel)	SU þsi	0500.7	1-#5 LOP	1-#0 LUP	1-#0 LUP	1-#0 t0p	2-#0 l0p	1-#0 LUP			
		3003.7	1-#0 UUL. #2 @ 2 75"	1-#3 DUL. #2 @ 2 75″	1-#3 DUL. #2 @ 2 75″	1-#0 UUL. #2 @ 2 75″	2-#0 DUL. 0 #2 @ 2 75″	1-#0 UUL. #2 @ 2 75″			
	50 nef		#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	#3@3.75	2=#3 @ 3.73	#3@ 3./3			
	50 hsi	2000 5	1 #5 hot	1 #5 bot	1 #5 hot	1 #6 hot	2=#0 t0p				
		3099.3	1=#3 DUL. #3 @ 3 75″	1-#3 DUL. #3 @ 3 75″	1=#J DUL. #2 @ 2 75″	1°#0 DUL. #3 @ 3 75″	2*#3 DUL 2_#3 @ 3 75″				
	70 nef		#3 @ 3.75	#3 @ 3.75	#3 @ 3.75	#3@3.75	2=#3 @ 3.73				
	70 p31	A215 A	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2_#5 hot				
		4210.4	1-#3 D0L #3 @ 3 75″	1-#3 DUL. #3 @ 3 75″	1-#3 b0t. #2 @ 2 75″	#2 @ 2 75"	2-#3 000. 2-#3 @ 3 75″				
(15 feet)	30 nsf		1-#5 ton	1-#5 ton	1-#5 ton	1-#6 ton	2-#5 ton				
(101000)	00 por	4186.8	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot				
		1100.0	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	#3 @ 3 75"	2-#3@375"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2.000000				
		4634.2	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.					
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"					
	70 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		5081.7	1-#5 bot.	1-#5 bot.	1-#6 bot	2-#5 bot.					
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"	2-#3 @ 3.75"					
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top					
· · /		4896.2	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"	2-#3 @ 3.75"					
	50 psf		1-#5 top	1-#5 top	1-#6 top						
		5475.2	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75″	#3 @ 3.75"						
	70 psf		1-#5 top	1-#5 top	1-#6 top						
		6054.3	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"						
(25 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top						
		5589.6	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"						
	50 psf		1-#5 top	1-#5 top	1-#6 top						
		6291.4	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 3.75"	#3 @ 3.75"	#3 @ 3.75"						
	70 psf		1-#5 top	1-#5 top							
		6993.3	1-#5 bot.	1-#5 bot.							
(0.0.4)			#3 @ 3.75"	#3 @ 3.75"	4 50 4						
(30 feet)	30 pst		1-#5 top	1-#5 top	1-#6 top						
		6535.4	1-#5 bot.	1-#5 bot.	1-#20 bot.						
	50 auf		#3@3.75	#3@3./5	#3@3.75						
	ou psr	7410.7	1-#5 t0p	1-#0 top							
		/412./	1-#0 UUL. #0 @ 0.75"	1-#0 DUL. #2 @ 0.75″							
	70 nef		#3 @ 3.75	#3 @ 3.75							
	10 hai	8200 N	1-#5 hot	1-#6 hot							
		0230.0	#3 @ 3 75"	#3 @ 3 75"							
(35 feet)	30 nsf		1-#5 top	1-#5 top							
(001000)	00 por	7024 4	1-#5 bot	1-#5 hot							
			#3 @ 3.75"	#3 @ 3.75"							
	50 psf		1-#5 top	1-#6 top							
		7998.2	1-#5 bot.	1-#6 bot.							
			#3 @ 3.75"	#3 @ 3.75″							
	70 psf		1-#5 top								
		8972.0	1-#5 bot.								
			#3 @ 3.75"								
(40 feet)	30 psf		1-#5 top	1-#6 top							
		7733.8	1-#5 bot.	1-#6 bot.							
			#3 @ 3.75"	#3 @ 3.75"							
	50 psf		1-#5 top								
		8839.2	1-#5 bot.								
			#3 @ 3.75"								
	70 psf		1-#5 top								
		9944.6	1-#5 bot.								
			#3 @ 3.75"								



Lintel Width = 10° Lintel Depth = 10° Effective Depth = 7.6° F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar 2-#3 @ 3.75" = use two #3 stirrups @ 3.75" O/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc ng Second S	ement for Li torey ICF + L	ntels in Load .ight Frame I	Bearing Wa Roof	lls	
Span	1080	Uniform Load	0.4	44	F #	C #	Lintel Span - Fee		0.4	40.4	44.0
(10 feet)	pst 20. psf	IDS/ft	3 ft	4 π 1 #5 top	5 Π 1 #5 top	0 Π	/π 1.#6.top	8 Π	9 π 1 #0 top	10 π	11 π
(TU leet)	30 psi	2610.6	1-#5 LOP	1-#0 LUP	1-#5 LUP	1-#5 l0p	1-#0 LUP	2-#5 l0p	1-#0 LUP	2-#0 l0p	
		3010.0	1-#0 UUL. #0 @ 4.5."	1-#0 DOL. #2 @ 4 5″	1-#0 DUL. #2 @ 4 5″	1-#0 DUL. #2 @ 4 5″	1-#0 DOL. #2 @ 4.5″	2-#0 DOL.	1-#0 UUL. #2 @ 4.5″	2-#0 UUL.	
	50 nef		#3 @ 4.5	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	2-#5 top	#3 @ 4.3	2*#3 @ 4.3	
	50 psi	301/17	1-#5 hot	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot	1-#8 hot		
		3314.7	#3 @ 1 5"	1-#3 D0L. #3 @ 4 5″	+2 @ 1 5″	+2 @ 1 5″	1-#0 D0L. #3 @ 4 5″	2-#3 @ 4.5"	1-#0 D0L. #2 @ / 5″		
	70 nef		#3 @ 4.5	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3 1_#6 ton	#3 @ 4.3	2-#5 top	#3 @ 4.3 2_#6 top		
	70 p31	/210.8	1-#5 hot	1-#5 hot	1-#5 hot	1-#6 hot	1-#6 hot	2-#5 hot	2_#6 hot		
		4210.0	#3 @ 4 5"	#3@45"	#3@45"	#3@45"	#3@45"	2#3 @ 4 5"	2.#3 @ 4.5"		
(15 feet)	30 nsf		1-#5 top	1-#5 top	1-#5 ton	1-#6 top	1-#6 top	2-#5 ton	2-#6 top		
(,		4212.3	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.		
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	2-#3 @ 4.5"		
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top	1-#8 top			
		4659.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"	#3 @ 4.5"			
	70 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		5107.1	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
(20 feet)	30 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		4921.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
	50 psf		1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		5500.7	1-#5 bot.	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"				
	70 psf		1-#5 top	1-#5 top	1-#6 top	1-#6 top	1-#8 top				
		6079.7	1-#5 bot.	1-#5 bot.	1-#6 bot.	1-#6 bot.	1-#8 bot.				
(05.6.1)	00(#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"				
(25 teet)	30 pst	5015.0	1-#5 top	1-#5 top	1-#5 top	1-#6 top	2-#5 top				
		010.0	1-#0 UUL. #0 @ 4.5"	1-#0 DOL.	1-#0 DUL.	1-#0 DUL.	2-#0 DOL.				
	50 pcf		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3	#3 @ 4.3 2_#5 top	2-#3 @ 4.5				
	50 psi	6316.9	1-#5 hot	1-#5 hot	1-#6 hot	2-#5 hot					
		0010.0	#3 @ 4 5"	#3@45"	#3 @ 4 5"	2-#3 @ 4 5"					
	70 psf		1-#5 top	1-#5 top	1-#6 top	2 / 0 0 110					
		7018.7	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
(30 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top	2-#5 top					
		6560.9	1-#5 bot.	1-#5 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"	2-#3 @ 4.5"					
	50 psf		1-#5 top	1-#5 top	1-#6 top						
		7438.2	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	70 psf	aa /	1-#5 top	1-#5 top	1-#6 top						
		8315.5	1-#5 bot.	1-#5 bot.	1-#6 bot.						
(0E 41)	204		#3@4.5"	#3 @ 4.5"	#3 @ 4.5"						
(35 teet)	30 pst	70.40.0	1-#5 top	1-#5 top	1-#6 top						
		/049.8	1-#0 DOL. #2 @ 4 ⊑″	1-#0 DOL. #2 @ 4 5"	1-#0 DOT. #2 @ 4 5"						
	50 pcf		#3 @ 4.3	#3 @ 4.3	#3 @ 4.3						
	ou hei	8023.7	1-#5 top	1-#5 top	1-#6 hot						
		0023.7	#3 @ 4 5"	#3 @ 4 5"	#3 @ 4 5"						
	70 nsf		#3 @ 4.3	#5 @ 4.5	<i>π</i> J ≪ 4.J						
	. o poi	8997 5	1-#5 hot	1-#5 hot							
		000110	#3 @ 4.5"	#3 @ 4.5"							
(40 feet)	30 psf		1-#5 top	1-#5 top	1-#6 top						
(· ····,		7759.2	1-#5 bot.	1-#5 bot.	1-#6 bot.						
			#3 @ 4.5"	#3 @ 4.5"	#3 @ 4.5"						
	50 psf		1-#5 top	1-#5 top							
	·	8864.7	1-#5 bot.	1-#5 bot.							
			#3 @ 4.5"	#3 @ 4.5"							
	70 psf		1-#5 top	1-#6 top							
		9970.1	1-#5 bot.	1-#6 bot.							
			#3 @ 4.5"	#3 @ 4.5"							



Lintel Width = 10" Lintel Depth = 12" Effective Depth = 9.6" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#5 top = top rebar 1-#5 bot.= bottom rebar

2-#3 @ 4.5" = use two #3 stirrups @ 4.5" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carrvi	um Reinforc	ement for Li torev ICF + L	ntels in Load ight Frame I	Bearing Wa Roof	lls	
Span	load	Uniform Load				0	Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top				
		3660.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	50 psf		1-#6 top	1-#6 top	2-#5 top	2-#5 top	1-#6+1-#5 top				
		3975.9	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	70 psf		1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top				
		4291.8	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
(15 feet)	30 psf		1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top				
		4263.2	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3@6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3@6.5"
	50 pst		1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top				
		4710.7	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.				
			no stirrups	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5	2-#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"
	70 pst	5150 I	1-#6 top	2-#5 top	1-#8 top	2-#6 top					
		5158.1	1-#6 DOT.	1-#6 DOT.	1-#b DOT.	1-#b DOT.	1-#6 DOT.	2-#5 DOT.	1-#8 DOT.	2-#6 DOT.	
(00 (+++))	00(no stirrups	#3@0.5	#3@6.5	#3@b.5	#3@b.5	2-#3@b.5	#3@6.5	2-#3@6.5	1 //0 1 //5 444
(20 teet)	30 psr	4070 C	1-#6 top	1-#0 top	1-#6 top	1-#0 top	1-#6 top	2-#5 top	2-#0 top	1-#0+1-#3 LOP	1-#8+1-#5 top
		4972.0	1-#6 DOL	1-#0 DOL.	1-#0 DOL.	1-#0 DOL	1-#0 DOL.	2-#5 DOL	2-#5 DOL	1-#0+1-#0 DOL	1-#8+1-#3 DOL
	E0 nof		1 #C top	#3 @ 0.0	#3 @ 0.0	#3@0.0	#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.5
	ou hai	5551.6	1-#0 LUP	1-#0 LUP	1-#0 LUP	1 #6 hot	1 #6 hot	2-#0 l0p	1 #6,1 #5 bot	2-#0 l0p	
		5551.0	1°#0 DUL. #2 @ 6 5″	1-#0 DUL. #2 @ 6 5″	1=#0 DUL. #2 @ 6 5″	1-#0 DUL. #2 @ 6 5"	1°#0 DUL. #2 @ 6 5″	2*#J DUL. 0 #2 @ 6 5″	1 #2 @ 6 5"	2=#0 JUL. 0 #2 @ 6 5″	
	70 nsf		#3 @ 0.5	#3@0.5	#3@0.5	#3@0.5	#3@0.5	2-#5 ton	2-#3 @ 0.3	2*#3 @ 0.3	
	70 µ31	6130.7	1-#6 hot	2-#5 top	1-#6+1-#5 hot						
		0150.7	#3@65"	#3@65″	#3 @ 6 5"	#3 @ 6 5"	#3 @ 6 5"	2-#3 000. 2-#3 @ 6.5″	2-#3 @ 6 5″		
(25 feet)	30 nsf		1-#6 ton	2-#5 ton	1-#6+1-#5 ton						
(201001)	00 001	5666.0	1-#6 hot	2-#5 hot	1-#6+1-#5 hot						
		0000.0	#3 @ 6 5"	#3@65"	#3@65"	#3 @ 6 5"	#3@65"	2-#3@65"	2-#3@65"		
	50 psf		1-#6 top	2-#5 top	2 4 0 0 0.0						
		6367.8	1-#6 bot.	2-#5 bot.							
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"			
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top			
		7069.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	2-#3 @ 6.5"			
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top			
		6611.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"			
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#8 top			
		7489.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#8 bot.			
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"	#3 @ 6.5"			
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top				
		8366.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.				
			#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"				
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top			
		7100.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.			
	50(#3@6.5	#3 @ 6.5	#3 @ 6.5	#3@6.5	2-#3@6.5	2-#3@6.5			
	50 psi	0074.0	1-#6 top	1-#0 top	1-#6 top	1-#0 top	2-#5 t0p				
		80/4.6	1-#6 DOL.	1-#0 DOL.	1-#0 DOL.	1-#0 DOL.	2-#0 DOL				
	70 nef		#3 @ 0.0 1_#6 ton	#3 @ 0.3 1_#6 ton	#0 @ 0.0 1_#6 ton	#3 @ 0.0 2_#5 ton	2-#3 @ 0.0 1_#6⊥1_#5 top				
	ru psi	00/8 /	1-#6 hot	1-#0 LUP	1-#6 hot	2-#3 lUp 2-#5 hot	1-#6+1-#5 tup				
		9040.4	1°#0 DUL. #2 @ 6 5″	1-#0 DUL. #2 @ 6 5″	1=#0 DUL. #2 @ 6 5″	2*#J UUL.	0 #2 @ 6 5"				
(40 feet)	30 nef		#0 ⊌ 0.0 1-#6 ton	#0 ₩ 0.0 1-#6 ton	#0 ≪ 0.0 1-#β ton	2-#3 ⊌ 0.3 1-#6 ton	2-#5 ton				
(40 1001)	00 hai	7810.2	1-#6 hot	1-#6 hot	1-#6 hot	1.#6 hot	2.#5 hot				
		1010.2	#3 @ 6 5"	#3@65"	#3 @ 6 5"	#3 @ 6 5"	2.#3@65"				
	50 nsf		#0 ⊛ 0.0 1-#6 t∩n	1-#6 ton	#0 ⊛ 0.0 1-#β t∩n	2-#5 ton	2 10 10 0.0				
	00 poi	8915.6	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot					
			#3 @ 6.5″	#3 @ 6.5"	#3 @ 6.5"	2-#3 @ 6.5"					
	70 psf		1-#6 top	1-#6 top	1-#6 top	2-#5 top					
	P	10021.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.					
			#3 @ 6.5″	#3 @ 6.5″	#3 @ 6.5″	2-#3 @ 6.5"					



Lintel Width = 10" Lintel Depth = 16" Effective Depth = 13.6" F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 6.5" = use two #3 stirrups @ 6.5" 0/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinforc ng Second S	ement for Lin torey ICF + L	ntels in Load .ight Frame I	Bearing Wa Roof	lls	
Span	load	Uniform Load	40.0	40.0		45.0	Lintel Span - Fee	t	40.0	40.0	00.11
teet	pst	lbs/tt	12 ft	13 ft	14 ft	15 ft	16 ft	1/ 11	18 ft	19 ft	20 ft
(TO teet)	30 psr	00004	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top						
		3660.1	2-#6 DOT.	1-#8+1-#5 DOT.	1-#8+1-#6 DOT.						
	50 ant		2-#3 @ 0.5	2-#3 @ 0.5	2-#3@0.5						
	ou hei	0075.0	2-#0 l0p								
		3975.9	2-#0 DOL								
	70 pof		2-#3@0.0								
	70 psi	4001.0	1-#0+1-#0 LUP								
		4291.0	1 #2 @ 6 5″								
(15 feet)	30 nef		2-#3 @ 0.3 1-#8⊥1-#5 ton								
(101001)	00 p31	4263.2	1-#8+1-#5 hot								
		1200.2	2-#3@65"								
	50 nsf		2 #0 8 0.0								
		4710.7									
	70 psf										
		5158.1									
(20 feet)	30 psf										
		4972.6									
	50 psf										
		5551.6									
	70 psf										
		6130.7									
(05.6.1)											
(25 feet)	30 pst	5000.0									
		5666.0									
	E0 pof										
	ou hei	6262.0									
		0007.0									
	70 nsf										
	10 pai	7069 7									
		100011									
(30 feet)	30 psf										
· · /	·	6611.8									
	50 psf										
		7489.1									
	70 psf										
		8366.5									
(35 feet)	30 pst										
		7100.8									
	50 auf										
	ou psr	9074.6									
		00/4.0									
	70 nef										
	70 p31	9048.4									
		50 IU.T									
(40 feet)	30 nsf										
(· · · · · · ,	· · · · ·	7810.2									
	50 psf										
		8915.6									
	70 psf										
		10021.0									



Lintel Width = $10^{"}$ Lintel Depth = $16^{"}$ Effective Depth = $13.6^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 1.#6 top = top rebar 1.#6 bot.= bottom rebar 2.#3 @ 6.5" = use two #3 stirrups @ 6.5" O/C

Floor Clear	Ground snow	Total Factored			Minim Carryi	um Reinford ing Second S	ement for Li Storey ICF + I	ntels in Load Light Frame I	Bearing Wal	lls	
Span	load	Uniform Load					Lintel Span - Fee	et			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 pst		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top
		3/11.0	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.
	E0 nof		no stirrups	no stirrups	#3 @ 8.5	#3@8.5	#3 @ 8.5	#3@8.5	#3@8.5	#3@8.5	2-#3@8.5
	50 psr	4006.0	1-#0 top	1-#6 t0p	1-#6 top	1-#0 top	1-#0 t0p	1-#0 top	1-#0 top	1-#0 top	2-#5 t0p
		4020.9	I-#0 UUL	1-#0 DUL	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	1-#0 DUL.	1-#0 UUL. #2 @ 0.5"	1-#0 DUL. #2 @ 0.5"	2-#0 DUL.
	70 nof		1 #6 top	1 #6 top	#3 @ 0.0	#3 @ 0.3	#3 @ 0.0	#3 @ 0.0	#3 @ 0.3	#3 @ 0.0	2-#3 @ 0.3
	70 psi	12127	1 #6 hot	1 #6 hot	1 #6 hot	1 #6 bot	1 #6 hot	1 #6 hot	1 #6 bot	2=#5 t0p	2=#5 top
		4042.7	no stirrups	1-#0 DOL	1°#0 DUL. #2 @ 0 ⊑″	1°#0 DUL. #2 @ 0 ⊑″	1-#0 DUL. #2 @ 0 ⊑″	1°#0 DUL. #2 @ 0 ⊑″	1-#0 DUL. #2 @ 0 ⊑″	2*#J DUL.	2=#3 DUL 0 #2 @ 0 ⊑″
(15 feet)	30 nef		1.#6 top	1-#6 top	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3	#3 @ 0.3 1_#6 ton	#3 @ 0.J	2=#3 @ 0.3	2=#3 @ 0.J
(13 1661)	50 psi	1211.2	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#5 top
		4014.2	no etirrune	no etirrupe	1-#0 D0L. #2 @ 8 5″	1-#0 D0L #3 @ 8 5″	1-#0 D0L. #3 @ 8 5″	1-#0 D0L. #2 @ 8.5″	1-#0 b0t. #3 @ 8 5″	2-#3 D0L 2-#3 @ 8.5″	2-#3 @ 8.5"
	50 nsf		1-#6 ton	1-#6 ton	#3 @ 0.5	#3 @ 0.3	#0 @ 0.5	#3 @ 0.3	#3 @ 0.3	2-#5 ton	2-#3 @ 0.3
	50 p31	4761.6	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	1-#6+1-#5 hot
		4701.0	no stirruns	no stirruns	#3@85"	#3 @ 8 5"	#3@85"	#3 @ 8 5"	#3 @ 8 5"	2#3 @ 8 5"	2-#3 @ 8 5″
	70 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	2-#5 ton	1-#6+1-#5 ton
	10 por	5209.0	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#5 hot	1-#6+1-#5 hot
		0200.0	no stirruns	#3@85"	#3@85"	#3 @ 8 5"	#3@85"	#3 @ 8 5"	2#3@85"	2#3 @ 8 5"	2-#3 @ 8 5″
(20 feet)	30 nsf		1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	1-#6 ton	2-#5 ton	2-#5 ton	1-#6+1-#5 ton
(201001)	00 por	5023.6	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	2-#5 hot	2-#5 hot	1-#6+1-#5 hot
		0020.0	no stirruns	#3@85"	#3@85"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	2-#3@85"	2-#3@85"	2-#3 @ 8 5"
	50 nsf		1-#6 top	1-#6 top	1-#6 ton	1-#6 top	1-#6 top	1-#6 top	2-#5 ton	1-#6+1-#5 top	2-#6 top
	00 por	5602.6	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 hot	1-#6 bot	2-#5 hot	1-#6+1-#5 bot	2-#6 bot
		0002.0	no stirruns	#3@85"	#3@85"	#3 @ 8 5"	#3 @ 8 5"	#3 @ 8 5"	2-#3@85"	2-#3@85"	2-#3@85"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		6181.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"
(25 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
(• • • •)		5716.9	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3@8.5"	2-#3 @ 8.5"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		6418.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		7120.6	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"
(30 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		6662.8	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#6 top
		7540.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#6 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top
		8417.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			#3 @ 8.5″	#3 @ 8.5″	#3 @ 8.5″	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7″	2-#3 @ 7"
(35 feet)	30 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top
		7151.7	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.
			no stirrups	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"
	50 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top
		8125.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"
	70 psf		1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#6 top	2-#8 top
		9099.4	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.
(10.1	00 (#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3@7"
(4U feet)	30 pst	7001	1-#6 top	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top
		7861.1	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3@7"
	50 pst	0000 5	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1-#8+1-#5 top	2-#8 top
		8966.5	1-#6 bot.	1-#6 bot.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.
	70 (#3 @ 8.5	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3@8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3@7"
	/U pst	10070.0	1-#6 top	1-#6 top	1-#6 top	1-#6 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top
		10072.0	1-#6 bot.	1-#6 DOT.	1-#6 bot.	1-#6 bot.	2-#5 bot.	1-#6+1-#5 bot.	I-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.
			#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	#3 @ 8.5"	2-#3@8.5"	2-#3@7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7"





10″

20~

Lintel Width = 10″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

-			Minimum Reinforcement for Lintels in Load Bearing Walls								
Floor Clear	Ground snow	Total Factored			Carryi	ng Second S	torey ICF + L	ight Frame I	Roof		
Span	load	Uniform Load	40.0	40.0		45.0	Lintel Span - Fee	t	40.0	40.0	
Teet (10 (set))	psr 00 ref	IDS/IT	12 ft	13 ft	14 ft	15 ft	16 Π 1 //0,1 //C top	1/ ft	18 ft	19 π 1 //0,1 //0,1	20 π
(TO Teel)	30 þsi	0711.0	1-#0+1-#3 LUP	1-#0+1-#0 LUP	2-#0 l0p	1-#0+1-#3 lup	1-#0+1-#0 LUP	2-#0 lUp	1-#9+1-#0 lup	1-#9+1-#0 LOP	2-#9 l0p
		3/11.0	1-#0+1-#0 DUL.	1-#0+1-#0 UUL	2-#0 DUL.	1-#0+1-#3 UUL.	1-#0+1-#0 UUL	2-#0 UUL.	1-#9+1-#0 UUL.	1-#9+1-#0 UUL.	2-#9 DOL.
	50 nof		2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ 0.0	2-#3 @ / 1 #0.1 #9 top	2-#3 @ 7	2-#3@1
	00 h2i	4026.0	1 #6,1 #5 hot	2=#0 t0p	1 #0,1 #5 bot	1 #0.1 #6 bot	2=#0 t0µ	2=#0 t0µ	1 #0.1 #0 lop	2-#9 top	
		4020.9	1-#0+1-#3 DUL. 0 #2 @ 0 ⊑″	2*#0 DUL. 0 #2 @ 9 5″	1=#0+1=#3 DUL 0 #2 @ 0 ⊑″	1=#0+1=#0 JUL. 0 #0 @ 0 5″	2"#0 DUL.	2"#0 DUL. 0 #2 @ 9 5"	1=#9+1=#0 UUL. 0 #0 @ 7"	2-#9 DUL. 0 #0 @ 7″	
	70 nef		2*#3 @ 0.3	2=#3 @ 0.3	2=#3 @ 0.3	2=#3 @ 0.3	2=#3 @ 0.3	2*#3 @ 0.3	2=#3 @ 7 2=#0 top	2=#3 @ 7 2_#0 top	
	70 μ31	1319 7	1-#6+1-#5 top	2-#6 hot	1-#8+1-#5 hot	1-#8+1-#6 hot	2-#8 hot	1-#0+1-#8 hot	2-#9 top 2-#0 hot	2-#9 top 2-#0 hot	
		4042.7	1-#0+1-#3 DOL 2_#2 @ 8 5″	2-#0 D0L 2-#3 @ 8.5″	1-#0 + 1-#3 DUL 2_#2 @ 8 5″	1-#0 + 1-#0 DUL. 2_#2 @ 8 5″	2-#0 D0L. 2-#2 @ 8.5″	1-#3+1-#0 DOL. 2_#2 @ 7″	2-#3 DUL 2-#3 @ 7"	2-#3 DUL 2-#3 @ 7"	
(15 feet)	30 nsf		2-#3 @ 0.5	2-#6 ton	2-#3 @ 0.3	2-#3 @ 0.3	2-#3 @ 0.3	2-#3 ⊛ 7 1_#9±1_#8 ton	2-#0 ton	2-#0 ton	
(101000)	00 p31	4314.2	1-#6±1-#5 hot	2-#6 hot	1.#8±1.#5 hot	1-#8+1-#6 hot	2-#8 hot	1-#0+1-#8 hot	2_#0 hot	2_#0 hot	
		1011.2	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@7"	2-#3 @ 7"	2-#3 @ 7"	
	50 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top	21001	
		4761.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7"	2-#3 @ 7"		
	70 psf		2-#6 top	1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		5209.0	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3@7"	2-#3 @ 7"	2-#3 @ 7"	2-#3@7"			
(20 feet)	30 psf		2-#6 top	1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
· · /		5023.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"			
	50 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		5602.6	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 7″	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
	70 psf		1-#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		6181.6	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
(25 feet)	30 psf		1-#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		5716.9	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"				
	50 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		6418.8	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"					
	70 psf		2-#8 top	2-#8 top	1-#9+1-#8 top						
		7120.6	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.						
			2-#3@7"	2-#3@7"	2-#3@7"						
(30 feet)	30 pst	0000.0	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		6662.8	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
	E0 nof		2-#3@7	2-#3@/	2-#3@7	2-#3@1					
	ou hei	7540.1	2-#0 lUp	1-#9+1-#0 LUP	2-#9 l0p						
		/ 540.1	2-#0 UUL.	1-#9+1-#0 UUL.	2-#9 DUL.						
	70 ncf		2=#3 @ 7	2=#3 @ 7	2#3@1						
	70 psi	8417.4	2-#8 hot	2-#9 top 2-#9 hot							
		0111.1	2-#3@7"	2-#3@7"							
(35 feet)	30 nsf		2-#8 ton	2-#8 ton	1-#9+1-#8 top						
(001000)	00 por	7151.7	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.						
			2-#3@7″	2-#3@7"	2-#3@7″						
	50 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
		8125.5	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 7"	2-#3 @ 7"	2-#3 @ 7"						
	70 psf		1-#9+1-#8 top	2-#9 top							
		9099.4	1-#9+1-#8 bot.	2-#9 bot.							
			2-#3 @ 7"	2-#3 @ 7"							
(40 feet)	30 psf		2-#8 top	1-#9+1-#8 top							
		7861.1	2-#8 bot.	1-#9+1-#8 bot.							
			2-#3 @ 7"	2-#3 @ 7"							
	50 psf		1-#9+1-#8 top	2-#9 top							
		8966.5	1-#9+1-#8 bot.	2-#9 bot.							
			2-#3 @ 7″	2-#3 @ 7"							
	70 psf		2-#9 top								
		10072.0	2-#9 bot.								
			2-#3 @ 7"								



Lintel Width = 10″ Lintel Depth = 20″ Effective Depth = 17.5″ F'c @ 28 days = 3,000 psi Fy = 60,000 psi

Legend 1-#6 top = top rebar 1-#6 bot.= bottom rebar

2-#3 @ 8.5" = use two #3 stirrups @ 8.5" O/C

 * check applicability limits table A1.3 in appendix A to use this chart

'n

Floor Clear	Ground snow	Total Factored			Minim	um Reinforc	ement for Li	ntels in Load	l Bearing Wa Roof	lls	
Span	load	Uniform Load			varryi	ng occond a	Lintel Span - Fee	t			
feet	psf	lbs/ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft	10 ft	11 ft
(10 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top
		3762.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top
		4077.8	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.
	70(no stirrups	no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 10.5"
	70 pst	4000.7	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top
		4393.7	2-#5 DOL	2-#5 DOT.	2-#5 DOT.	2-#5 DOL	2-#5 DOL	2-#5 DOL	2-#5 DOT.	2-#5 DOT.	2-#5 DOL
(15 feet)	20 nof		10 Stirrups	no surrups	no surrups	2-#3 @ 10.5	2-#3 @ 10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3 @ 10.5
(15 leet)	50 þsi	4365.1	2-#5 top 2-#5 hot	2=#5 top 2=#5 hot	2-#5 top 2-#5 hot	2-#5 top 2-#5 hot	2-#5 top 2-#5 hot	2=#5 top 2=#5 hot	2=#5 top 2=#5 hot	2=#5 top 2=#5 hot	2-#5 top 2-#5 hot
		4000.1	no stirruns	no stirruns	no stirruns	2-#3 @ 10.5"	2-#3@105"	2-#3@105"	2-#3 @ 10.5"	2-#3@105"	2-#3 @ 10 5"
	50 nsf		2-#5 top	2-#5 top	2-#5 top	2-#5 ton	2-#5 ton	2-#5 ton	2-#5 ton	2-#5 ton	2-#5 top
	00 por	4812.5	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 hot.	2-#5 bot.	2-#5 bot.	2-#5 bot.
		1012.0	no stirrups	no stirrups	2-#3@10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top
		5260.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
(20 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top
		5074.5	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top
		5653.5	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.
			no stirrups	no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top
		6232.6	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.
			no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
(25 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top
	(25 feet) 30 psf	5767.9	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.
	50 auf		no stirrups	no stirrups	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5	2-#3@10.5
	50 pst	6460.7	2-#5 top	2-#5 top	2-#5 top	2-#5 t0p	2-#5 t0p	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top
		6469.7	2-#5 DOL	2-#5 DOL 0.#2.@ 10.5″	2-#3 DOL.	2-#0 DOL	2-#0 DOL	2-#0 DOL	2-#0 DOL	2-#0 DOL.	1-#0+1-#0 DOL
	70 pcf		2-#5 top	2-#3 @ 10.3	2-#3 @ 10.3	2-#5 @ 10.5	2-#5 @ 10.5	2-#5 @ 10.5	2=#3 @ 10.3	2=#3 @ 10.3 1_#6+1_#5 top	2=#3 @ 10.3 1_#6+1_#5 ton
	70 µ31	7171.6	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	1-#6+1-#5 hot	1-#6+1-#5 hot
		/ 1/ 1.0	no stirruns	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@105"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10 5"
(30 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	1-#6+1-#5 top
(,		6713.7	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#6+1-#5 bot.
			no stirrups	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		7591.0	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	1#8+1-#5 top
		8468.3	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
(35 feet)	30 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		7202.7	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"
	50 psf	0470.5	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top
		8176.5	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.
	70(2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 10.5"
	/U pst	0160.0	2-#0 LOP	2-#0 TOD	2-#0 TOD	2-#5 TOP	2-#0 TOP	2-#0 TOP	1 #6.1 #5 bot	2-#0 top	1 #0,1 #5 bot
		9100.3	∠-#0 DOL 0.#0.@ 10.5″	2-#0 DOL. #2 @ 10.5″	2-#0 DOL.	∠-#0 DOT.	2-#0 DOL	2-#0 DOL.	1-#0+1-#5 DOL.	2-#0 DOL	1-#ŏ+1-#5 DOt.
(AD foot)	20 pcf		∠-#3 ⊌ 10.3 2_#5 ton	#3 @ 10.3	∠-#3 @ 10.5	2-#3 @ 10.5	2-#3 @ 10.3	2-#3 € 10.3 2_#5 top	2-#3 ⊌ 10.3 2_#5 top	∠-#3 ⊌ IU.5 1_#6+1 #5 tor	2-#3 @ 0.0
(40 1661)	ou hai	7010 1	2=#J LUP 2=#5 hot	2=#0 LUP 2=#5 hot	2=#3 LUP 2=#5 hot	2=#3 LUP 2=#5 hot	2=#3 LUP 2=#5 hot	2=#3 lUp 2=#5 hot	2=#3 lUp 2=#5 hot	1=#6±1=#5 hot	2=#0 LUP 2=#6 hot
		1912.1	2-#3 DUL 2_#3 @ 10 5″	2-#J JUUL 2_#2 @ 10 5″	2-#J UUL 2_#3 @ 10 5″	2-#J DUL 2_#3 @ 10 5″	2-#J DUL 2_#3 @ 10.5″	2-#J JUL. 2_#3 @ 10 ⊑"	2-#J DUL 2_#3 @ 10.5″	2_#3 @ 10 5″	2-#0 DUL 2_#3 @ 10 5″
	50 nef		2-#3 ⊛ 10.3 2-#5 ton	2-#5 ton	2-#3 ⊌ 10.3 2-#5 ton	2-#3 ⊌ 10.3 2-#5 ton	2-#5 ton	2-#3 ⊌ 10.0 2-#5 ton	2-#0 ⊌ 10.0 1-#6+1-#5 top	2-#0 ⊌ 10.0 2-#6 ton	2-#3 ⊌ 10.3 1-#8+1-#5 ton
	00 poi	9017 5	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	2-#5 hot	1-#6+1-#5 hot	2-#6 hot	1-#8+1-#5 hot
		001110	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"
	70 psf		2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	2-#5 top	1-#6+1-#5 top	1-#8+1-#5 top	1-#8+1-#6 top
	P .	10122.9	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"



10

Lintel Width = $10^{"}$ Lintel Depth = $24^{"}$ Effective Depth = $21.5^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi **Legend** 2-#6 top = top rebar 2-#6 bot.= bottom rebar

2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C

Floor Clear	Ground snow	Total Factored	Minimum Reinforcement for Lintels in Load Bearing Walls Carrying Second Storey ICF + Light Frame Roof Lintel Snar - Feat								
feet	nsf	lhs/ft	12 ft	13 ft	14 ft	15 ft	16 ft	17 ft	18 ft	19 ft	20 ft
(10 feet)	30 psf	100/11	2-#5 top	2-#5 top	1-#6+1-#5 top	2-#6 top	1#8+1-#5 top	1-#8+1-#6 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top
· · /		3762.0	2-#5 bot.	2-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	50 psf		2-#5 top	1-#6+1-#5 top	1-#6+1-#5 top	2-#6 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top
		4077.8	2-#5 bot.	1-#6+1-#5 bot.	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"
	70 psf		2-#5 top	1-#6+1-#5 top	2-#8 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top
		4393.7	2-#5 bot.	1-#6+1-#5 bot.	2-#8 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"
(15 feet)	30 pst	1005.4	2-#5 top	1-#6+1-#5 top	2-#8 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top
		4300.1	2-#0 DOL	1-#0+1-#0 DOL	2-#8 DOL	1-#8+1-#3 DOL 0.#2 @ 10.5″	1-#0+1-#0 DOL	2-#8 DOL	2-#8 DOL 0.#0.@ 10.5″	1-#9+1-#8 DOL	1-#9+1-#8 DOL
	50 pef		2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3	2-#3 @ 10.3 1#8+1-#5 top	2-#3 @ 10.5 1_#8+1_#6 top	2-#3 @ 10.3	2-#3 @ 10.3 1_#0+1_#8 top	2-#3 @ 0.3	2-#3 @ 0.0
	50 psi	4812.5	1-#6±1-#5 hot	1-#6+1-#5 hot	2-#8 hot	1-#8+1-#5 hot	1-#8+1-#6 hot	2-#8 hot	1-#0±1-#8 hot	1-#0+1-#8 hot	2-#9 top 2-#9 hot
		4012.0	2-#3 @ 10 5"	2-#3@105"	2.#3@10.5"	2-#3 @ 10 5"	2-#3 @ 10 5"	2-#3@10.5"	2-#3@85"	2-#3@85"	2-#3@85"
	70 psf		1-#6+1-#5 top	2-#6 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2 //0 8 0.0
		5260.0	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
(20 feet)	30 psf		1-#6+1-#5 top	2-#6 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top	
		5074.5	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	
	50 psf		1-#6+1-#5 top	2-#6 top	1#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top		
		5653.5	1-#6+1-#5 bot.	2-#6 bot.	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.		
			2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
	70 psf		2-#6 top	1#8+1-#5 top	1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top	2-#9 top		
		6232.6	2-#6 bot.	1-#8+1-#5 bot.	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.	2-#9 bot.		
			2-#3 @ 10.5"	2-#3@10.5"	2-#3@10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"		
(25 feet)	30 psf	5707.0	2-#6 top	1-#8+1-#6 top	1-#8+1-#6 top	2-#8 top	2-#9 top	1-#9+1-#8 top	2-#9 top		
		5767.9	2-#6 bot.	1-#8+1-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#9 bot.	1-#9+1-#8 bot.	2-#9 bot.		
	E0 pof		2-#3 @ 10.5	2-#3@10.5	2-#3@10.5	2-#3@8.5	2-#3@8.5	2-#3 @ 8.5	2-#3 @ 8.5		
	ou hai	6460.7	2-#0 LUP 2 #6 hot	1 #0+1-#0 LUP	1 #0+1-#0 LUP	2-#0 lUp 2 #8 bot	1-#9+1-#0 LUP	2-#9 l0p			
		0409.7	2*#0 JUL 2_#3 @ 10 5″	1=#0+1=#0 DUL 2_#2 @ 10.5"	1=#0+1=#0 DUL 2_#2 @ 10 5"	2=#0 JUL. 2_#3 @ 8.5"	1-#9+1-#0 DUL 2_#2 @ 8 5″	2=#9 DUL 2_#3 @ 8 5″			
	70 nsf		2-#3 @ 10.3 1#8₊1-#5 ton	2-#3 @ 10.3	2-#8 ton	2-#3 @ 0.5	2-#9 ton	2-#3 @ 0.3			
	10 por	7171.6	1-#8+1-#5 hot	1-#8+1-#6 bot	2-#8 hot	1-#9+1-#8 bot	2-#9 hot				
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
(30 feet)	30 psf		2-#6 top	1-#8+1-#6 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top			
		6713.7	2-#6 bot.	1-#8+1-#6 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.			
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"			
	50 psf		1#8+1-#5 top	2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top				
		7591.0	1-#8+1-#5 bot.	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 10.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
	70 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		8468.3	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
(05.6))	00(2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	0.001				
(35 1661)	30 psr	7000 7	1#8+1-#3 LOP	1-#8+1-#0 LOP	2-#8 top	1-#9+1-#8 top	2-#9 top				
		1202.1	1-#0+1-#0 UUL 0 #2 @ 10 5″	1-#0+1-#0 DUL 0 #2 @ 9 5"	2-#0 UUL. 0 #2 @ 9.5″	1-#9+1-#0 DUL.	2-#9 DUL. 0 #2 @ 0 ⊑″				
	50 nef		2-#3 @ 10.5	2=#3 @ 0.5	2=#3 @ 0.3	2=#3 @ 0.5	2*#3 @ 0.5				
	50 p31	8176 5	1-#8+1-#6 hot	2-#8 hot	1-#9+1-#8 hot	2-#9 hot					
		011010	2-#3@85"	2-#3@85"	2-#3@85"	2-#3@85"					
	70 psf		2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		9150.3	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
(40 feet)	30 psf		1-#8+1-#6 top	2-#8 top	1-#9+1-#8 top	1-#9+1-#8 top	2-#9 top				
		7912.1	1-#8+1-#6 bot.	2-#8 bot.	1-#9+1-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.				
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"				
	50 psf		2-#8 top	2-#8 top	1-#9+1-#8 top	2-#9 top					
		9017.5	2-#8 bot.	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.					
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"					
	70 psf		2-#8 top	1-#9+1-#8 top	2-#9 top						
		10122.9	2-#8 bot.	1-#9+1-#8 bot.	2-#9 bot.						
			2-#3 @ 8.5"	2-#3 @ 8.5"	2-#3 @ 8.5"						



Lintel Width = $10^{"}$ Lintel Depth = $24^{"}$ Effective Depth = $21.5^{"}$ F'c @ 28 days = 3,000 psi Fy = 60,000 psi Legend 2-#6 top = top rebar 2-#6 bot.= bottom rebar 2-#3 @ 10.5" = use two #3 stirrups @ 10.5" O/C



A2.1 - Canadian Lintel Tables



Disclaimer

Amvic assumes no liability whatsoever with regards to the correct use of the lintel tables. It is the user's responsibility to assess a specific situation and determine if the limitations and assumptions given in sections A1.1 & A1.2 are satisfied in order to use the tables. It is also the user's responsibility to determine the correct table to use for the specific lintel being considered.

A2.2 - US Lintel Tables



Disclaimer

Amvic assumes no liability whatsoever with regards to the correct use of the lintel tables. It is the user's responsibility to assess a specific situation and determine if the limitations and assumptions given in sections A1.1 & A1.2 are satisfied in order to use the tables. It is also the user's responsibility to determine the correct table to use for the specific lintel being considered.





B1.0 – Canada

Currently we have two main engineering resources for walls to be constructed with Amvic ICF.

- 1. **CCMC report no. 13043-R** which can be used as a reference for all Canadian provinces.
- 2. **National Building Code of Canada 2005** (**NBC 2005**) upon which the individual provincial building codes of Canada's provinces are based.

Reinforced or plain concrete walls to be constructed using Amvic ICF and which are outside the applicability limits of **CCMC 13043-R** and **NBC 2005** shall be designed and approved by a local licensed/registered engineer.

B1.1 – CCMC 13043-R

This report can be used and is recognized by most building departments of local cities, throughout Canada. Since at the time of printing this manual the provincial building code models have not had time to adopt or adapt to the new NBC 2005, this report will remain an essential engineering resource that can readily be used.

The report is available upon request and can be either downloaded from the Amvic website or from **Canadian Construction Material Centre** website as given below:

www.irc.nrc-cnrc.gc.ca/ccmc/regprodeval_e.shtml

B1.2 – National Building Code of Canada 2005

The following articles and/or tables are reproduced from NBC 2005 and will have the specific NBC 2005 reference from which they were obtained.

B1.2.1 – Application

All information given under section **B1.2** is applicable to structures which fall under **Part 9 Housing and Small Buildings of NBC 2005.**



B1.2.2 – Materials

1. Concrete

a) [NBC 2005 - 9.3.1.1 (4)] For flat insulating concrete form walls not exceeding 2 storeys and having a maximum floor to floor height of 3m, in buildings of light frame construction containing only a single dwelling unit, the concrete and reinforcing shall comply with Part 4 or :

CAN/CSA-A23.1 "Concrete Materials and Methods of Concrete Construction" and maximum aggregate size of 19mm

b) [NBC 2005 – 9.3.1.6 (1)] Compressive strength of un-reinforced concrete after 28 days shall be not less than 15 MPa for walls, columns, fireplaces and chimneys, footings, foundation walls, grade beams and piers

2. Reinforcing Steel

[NBC 2005 – 9.3.1.1 (4)] Reinforcing shall:

- a) Conform to **CAN/CSA-G30.18-M** "Billet-Steel Bars for Concrete Reinforcement"
- b) Have a minimum Specified yield strength of 400 MPa, and
- c) Be lapped a minimum of 450 mm for 10M bars and 650 mm for 15M bars

B1.2.3 – Footings and Foundations

B1.2.3.1 – Application

The articles and/or tables given in section B1.2.3 applies to:

[NBC 2005 – 9.15.1.1 (C)] Flat insulating concrete form foundation walls and concrete footings not subject to surcharge and:

- i) on stable soils with an allowable bearing pressure of 100 KPa (2000 lbs/sq.ft) or greater
- ii) for buildings of light frame or flat insulating concrete form construction that are not more than 2 storeys in building height, with a maximum floor to floor height of 3m, and containing only a single dwelling unit.



[NBC 2005 – 9.15.3.3] Minimum footing width shall apply to footings where

- a) the footings support
 - i) foundation walls of masonry, concrete or flat insulating concrete form walls
 - ii) above-ground walls of masonry, flat insulating concrete form walls or light wood frame construction and
 - iii) floors and roofs of light wood frame construction
- b) The span of supported joists does not exceed 4.9m, and
- c) The specified live load on any floor supported by the footing does not exceed 2.4 KPa.

B1.2.3.2 – Minimum Footing Sizes

Footing Width

Minimum Footing Sizes						
No. of Floors	Minimum Width of	Minimum Ecoting Area for				
Supported	Supporting Exterior Walls (*1)	Supporting Interior Walls (*2)	Columns Spaced 3m o.c.			
1	250	200	0.4			
2	350	350	0.75			
3	450	500	1.0			

NBC 2005 - Table 9.15.3.4

(*1) Adjustments to Footing Widths for Exterior Walls

[NBC 2005 – 9.15.3.5] The strip footing for exterior walls shown in table 9.15.3.4 shall be increased by

- a) 65 mm for each storey of masonry veneer over wood-frame construction supported by the foundation wall,
- b) 130 mm for each storey of masonry construction supported by the foundation wall, and
- c) 150 mm for each storey of flat insulating concrete form wall construction supported by the foundation wall

(*2) Adjustments to Footing Widths for Interior Walls

[**NBC 2005 – 9.15.3.6 (1)**] The minimum strip footing widths for interior loadbearing masonry walls shown in Table 9.15.3.4 shall be increased by 100 mm for each storey of masonry construction supported by the footing.



[**NBC 2005 – 9.15.3.6 (2)**] Footings for interior non-loadbearing masonry walls shall be not less than 200 mm wide for walls up to 5.5 m high and the widths shall be increased by 100 mm for each additional 2.7 m of height.

Footing Thickness

[NBC 2005 - 9.15.3.8] Footing thickness shall be not less than the greater of

- a) 100 mm, or
- b) the width of the projection of the footing beyond the supported element

B1.2.4 – Foundation Walls

B1.2.4.1 – Application

Application of the articles and/or tables given in section B1.2.4 is subject to the following conditions:

- [NBC 2005 9.15.4.1 (1)] Insulating concrete form units shall be manufactured of polystyrene conforming to the performance requirements of CAN/ULC-S701 "Thermal Insulation Polystyrene, Boards and Pipe Covering" for type 2, 3 or 4 polystyrene.
- 2. [NBC 2005 9.15.4.2 (2)] The thickness of concrete in flat insulating concrete form foundation walls shall be not less than the greater of
 - a) 140 mm, or
 - b) the thickness of the concrete in the wall above
- 3. [NBC 2005 9.15.4.2 (3)] Foundation walls made of flat insulating concrete form units shall be laterally supported at the top and at the bottom. Please refer to articles 9.15.4.3 and 9.15.4.4 for determining bottom and top lateral support of walls.



B1.2.4.2 – Reinforcement for Flat Insulating Concrete Form Foundation Walls

Horizontal Reinforcement

[NBC 2005 – 9.15.4.5 (1)] Horizontal reinforcement in flat insulating concrete form foundation walls shall

- a) consist of
 - ii) one 10M bar placed not more than 300 mm from the top of the wall, and
 - ii) 10M bars at 600 mm o.c. and
- b) be located
 - i) in the inside half of the wall section and
 - ii) with a minimum cover of 30 mm from the inside face of the concrete

Vertical Reinforcement

[NBC 2005 – 9.15.4.5 (2)] Vertical reinforcement in flat insulating concrete form foundation walls shall be

- a) provided in accordance with
 - i) Table 9.15.4.5.A for 140 mm walls [use for 6 inch (152 mm) Amvic forms]
 - ii) Table 9.15.4.5.B for 190 mm walls [use for 8 inch (203 mm) Amvic forms]
 - iii) Table 9.15.4.5.C for 240 mm walls [use for 10 inch (254 mm) Amvic forms]
- b) located in the inside half of the wall section with a minimum cover of 30 mm from the inside face of the concrete wall, and
- c) where interrupted by wall openings, placed not more than 600 mm from each side of the openings



Max. Height of Finished	Minimum Vertical Reinforcement					
Ground Above Finished	Maximur	ximum Unsupported Basement Wall Height				
Basement Floor, M	2.44 m	2.75 m	3.0 m			
1.35	10M at 400 mm o.c	10M at 400 mm o.c.	10M at 400 mm o.c.			
1.6	10M at 400 mm o.c	10M at 380 mm o.c.	10M at 380 mm o.c.			
2	10M at 380 mm o.c	10M at 380 mm o.c.	10M at 380 mm o.c.			
2.2	10M at 250 mm o.c	10M at 250 mm o.c.	10M at 250 mm o.c.			
2.35	n/a	10M at 250 mm o.c.	10M at 250 mm o.c.			
2.6	n/a	10M at 250 mm o.c.	10M at 250 mm o.c.			
3	n/a	n/a	10M at 250 mm o.c.			

Table 9.15.4.5.A Vertical Reinforcement for 140 mm Flat Insulating Concrete Foundation Walls [Amvic 6 inch (152 mm) Forms]

NBC 2005 - Table 9.15.4.5.B Vertical Reinforcement for 190 mm Flat Insulating Concrete Foundation Walls [Amvic 8 inch (203 mm) Forms]

Max. Height of Finished	Minimum Vertical Reinforcement					
Ground Above Finished	Maximum Unsupported Basement Wall Height					
Basement Floor, m	2.44 m	2.75 m	3.0 m			
2.2	Not required	10M at 400 mm o.c.	10M at 400 mm o.c.			
2.35	n/a	10M at 300 mm o.c.	10M at 300 mm o.c.			
2.6	n/a	10M at 300 mm o.c.	10M at 400 mm o.c.			
3	n/a	n/a	10M at 400 mm o.c.			

NBC 2005 - Table 9.15.4.5.C Vertical Reinforcement for 240 mm Flat Insulating Concrete Foundation Walls [Amvic 10 inch (254 mm) Forms]

Max. Height of Finished	Minimum Vertical Reinforcement					
Ground Above Finished	Maximum Unsupported Basement Wall Height					
Basement Floor, m	2.44 m	2.75 m	3.0 m			
2.2	Not required	10M at 400 mm o.c.	10M at 400 mm o.c.			
2.35	n/a	10M at 300 mm o.c.	10M at 300 mm o.c.			
2.6	n/a	10M at 300 mm o.c.	10M at 400 mm o.c.			
3	n/a	n/a	10M at 400 mm o.c.			

[NBC 2005 -9.15.4.5 (3)] Cold joints in flat insulating concrete form foundation walls shall be reinforced with no less than one 15M bar spaced at not more than 600 mm o.c. and embedded 300 mm on both sides of the joint.


B1.2.5 – Above Grade Walls

B1.2.5.1 – Application

The articles and/or tables given in section B1.2.5 applies to:

[NBC 2005 – 9.20.1.1 (1) (B)] Flat insulating concrete form walls not in contact with the ground that;

- i) have a maximum floor to floor height of 3m,
- ii) are erected in buildings not more than 2 storeys in building height and containing only a single dwelling unit, and
- iii) are erected in locations where the seismic spectral response accelerations, Sa(0.2), is not greater than 0.4

B1.2.5.2 – Thickness for Flat Insulating Concrete Form Walls

[**NBC 2005 - 9.20.17.1** (1)] The thickness of the concrete in flat insulating concrete form walls not in contact with the ground shall be

- a) not less than 140 mm, and
- b) constant for the entire height of the wall

B1.2.5.3 – Reinforcement for Flat Insulating Concrete Form Walls

Horizontal Reinforcement

[NBC 2005 – 9.20.17.2 (1)] Horizontal reinforcement in above-grade flat insulating concrete form walls shall

- a) consist of
 - i) one 10M bar placed not more than 300 mm from the top of the wall, and
 - ii) 10M bars at 600 mm o.c. and
- b) be placed in the middle third of the wall section



Vertical Reinforcement

[NBC 2005 – 9.20.17.2 (2)] Vertical reinforcement in above-grade flat insulating concrete form walls shall

- a) consist of 10M bars at 400 mm o.c. and
- b) be placed in the middle third of the wall section

[**NBC 2005 – 9.20.17.2 (3**)] Vertical reinforcement required by above sentence and interrupted by wall openings shall be placed not more than 600 mm from each side of the opening.

B1.2.5.4 – Openings in Non-Loadbearing Flat ICF walls

[NBC 2005 – 9.20.17.3]

- 1. No openings shall occur within 1200 mm of interior and exterior corners of exterior non-load-bearing flat ICF walls
- 2. Portions of walls above openings in non-load-bearing flat ICF walls shall have a minimum depth of concrete of no less than 200 mm across the width of the opening.
- 3. Openings that are more than 600 mm but not more than 3000 mm in width in non-load-bearing flat ICF walls shall be reinforced at the top and bottom with one 10M bar.
- 4. Openings more than 3000 mm in width in non-load-bearing flat ICF walls shall be reinforced on all four sides with two 10M bars.
- 5. Reinforcing bars described in sentences (3) and (4) shall extend 600 mm beyond the edges of the opening.
- 6. The cumulative width of openings in non-load-bearing flat ICF walls shall not make up more than 70% of the length of any wall.

B1.2.5.5 – Lintels over Openings in Load-bearing Flat ICF walls

[NBC 2005 - 9.20.17.4]

- 1. In load-bearing flat ICF walls, lintels shall be provided over all openings wider than 900 mm.
- 2. Lintels described in above sentence over openings wider than 1200 mm shall be reinforced for shear with 10M stirrups at a maximum spacing of half the distance from the bottom reinforcing bar to the top of the lintel.



B1.2.5.6 – Framing Supported on Flat ICF walls

[NBC 2005 – 9.20.71.5]

- 1. Floor joists supported on the side of flat insulating concrete from walls shall be supported with joist hangers secured to wood ledger boards.
- 2. The ledger boards referred to in above sentence shall be not less than
 - a) 38 mm thick, and
 - b) the depth of the floor joists
- 3. Anchor bolts shall be used to secure ledger boards to flat ICF walls and shall be

- a) embedded in the wall to a depth not less than 100 mm, and
- b) spaced in accordance with table 9.20.17.5 (below)

Maximum Anchor Bolt Spacing for the Connection of Floor Ledgers to Flat ICF walls						
Maximum Cloar Eloor Span m	Maximum Anchor Bolt Spacing, mm					
Maximum clear Floor Span, m	Staggerred 12.7 mm Diameter Anchor Bolts	Staggered 16 mm Diameter Anchor Bolts				
2.44	450	500				
3.0	400	450				
4.0	300	400				
5.0	275	325				

NBC 2005 - Table 9.20.17.5

B1.2.5.7 – Anchoring of Roof Framing to Top Of Flat ICF walls

[NBC 2005 – 9.20.17.6]

- 1. Roof framing supported on the top of flat ICF walls shall be fixed to the top plates, which shall be anchored to the wall with anchor bolts
 - a) not less than 12.7 mm in diameter, and
 - b) spaced at not more than 1200 mm o.c
- 2. The anchor bolts described in above sentence shall be placed in the centre of the flat ICF wall and shall be embedded no less than 100 mm into the concrete.



B2.0 – **USA**

There are two main resources for the engineering of flat ICF walls in the United States:

- 1. **Prescriptive Method for Insulating Concrete Forms in Residential Construction** prepared by NAHB (National Association of Home Builders) and PCA (Portland Cement Association). This document is widely recognized across most of the states, and is stated in the Amvic ICC (International Code Council) legacy report ESR-1269 as an approved engineering source.
- 2. ACI 318 "Building Code Requirements for Structural Concrete" is used for walls which are outside the scope and applicability limits of the Prescriptive Method. A local licensed/registered engineer is required to approve the design using this resource.

B2.1 – Prescriptive Method

The prescriptive method book can be downloaded online from the following link:

www.huduser.org/publications/destech/icf_2ed.html

The articles and/or tables contained herein are reproduced from the prescriptive method and each will have the specific reference from which they were obtained.

B2.1.1 – Scope

[Prescriptive Method 1.3]

1. The provisions of the *Prescriptive Method* apply to the construction of detached one- and two-family homes, townhouses, and other attached single-family dwellings in compliance with the general limitations of Table 1.1 (below).



ATTRIBUTE	MAXIMUM LIMITATION			
General				
Number of Stories	2 stories above grade plus a basement			
Design Wind Speed	150 mph (241 km/hr) 3-second gust (130 mph (209 km/hr) fastest-mile)			
Ground Snow Load	70 psf (3.4 kPa)			
Seismic Design Category	A, B, C, D1, and D2 (Seismic Zones 0, 1, 2, 3, and 4)			
Foundations				
Unbalanced Backfill Height	9 feet (2.7 m)			
Equivalent Fluid Density of Soil	60 pcf (960 kg/m3)			
Presumptive Soil Bearing Value	2,000 psf (96 kPa)			
Walls				
Unit Weight of Concrete	150 pcf (23.6 kN/m3)			
Wall Height (unsupported)	10 feet (3 m)			
Floors				
Floor Dead Load	15 psf (0.72 kPa)			
First-Floor Live Load	40 psf (1.9 kPa)			
Second-Floor Live Load (sleeping rooms)	30 psf (1.4 kPa)			
Floor Clear Span (unsupported)	32 feet (9.8 m)			
Roofs				
Maximum Roof Slope	12:12			
Roof and Ceiling Dead Load	15 psf (0.72 kPa)			
Roof Live Load (ground snow load)	70 psf (3.4 kPa)			
Attic Live Load	20 psf (0.96 kPa)			
Roof Clear Span (unsupported)	40 feet (12 m)			

Prescriptive Method - TABLE 1.1	I
APPLICABILITY LIMITS	

For SI: 1 foot = 0.3048 m; 1 psf = 47.8804 Pa; 1 pcf = 157.0877 N/m3 = 16.0179 kg/m3; 1 mph = 1.6093 km/hr

- 2. An engineered design shall be required for houses built along the immediate, hurricane-prone coastline subjected to storm surge (i.e., beach front property) or in near-fault seismic hazard conditions (i.e., Seismic Design Category E).
- 3. The provisions of the *Prescriptive Method* shall not apply to irregular structures or portions of structures in Seismic Design Categories C, D1, and D2.



B2.1.2 – Material Specifications

ICF Size

[Prescriptive Method 2.1.1]

1. Flat ICF wall systems shall have a minimum concrete thickness of 5.5 inches (140 mm) for basement walls and 3.5 inches (89 mm) for above-grade walls.

Concrete Slump

[Prescriptive Method 2.2.1]

Ready-mixed concrete for ICF walls shall meet the requirements of ASTM C 94 [13]. Maximum slump shall not be greater than 6 inches (152 mm) as determined in accordance with ASTM C 143 [11]. Maximum aggregate size shall not be larger than 3/4 inch (19 mm).

Exception: Maximum slump requirements may be exceeded for approved concrete mixtures resistant to segregation, meeting the concrete compressive strength requirements, and in accordance with the ICF manufacturer's recommendations.

Concrete Compressive Strength

[Prescriptive Method 2.2.2]

- 1. The minimum specified compressive strength of concrete, *fc*', shall be 2,500 psi (17.2 MPa) at 28 days as determined in accordance with ASTM C 31 [8] and ASTM C 39 [9].
- 2. For Seismic Design Categories D₁ and D₂, the minimum compressive strength of concrete, *fc*', shall be 3,000 psi.

Reinforcing Steel

[Prescriptive Method 2.2.3]

- 1. Reinforcing steel used in ICFs shall meet the requirements of ASTM A 615 [14], ASTM A 996 [15], or ASTM A 706 [16].
- 2. In Seismic Design Categories D1 and D2, reinforcing steel shall meet the requirements of ASTM A706 [16] for low-alloy steel.



- 3. The minimum yield strength of the reinforcing steel shall be 40,000 psi, Grade 40 (300 MPa) except in Seismic Design Categories D1 and D2 where reinforcing steel shall have a minimum yield strength of 60,000 psi (Grade 60) (414 MPa).
- 4. Steel reinforcement shall have a minimum 3/4-inch (19mm) concrete cover.

EPS Materials

[Prescriptive Method 2.3]

- 1. Insulating concrete forms shall be constructed of rigid foam plastic meeting the requirements of ASTM C 578 [17].
- 2. Flame-spread rating of ICF forms that remain in place shall be less than 75 and smoke-development rating of such forms shall be less than 450, tested in accordance with ASTM E 84.



B2.1.3 – Footings

[Prescriptive Method 3.1]

1. Minimum sizes for concrete footings shall be as set forth in Table 3.1 (below)

	F	DOTINGS FOR ICF	WALLS 1,2,3 (Inches	s)			
Maximum Number		MINIMUN	LOAD BEARING	VALUE OF SOIL (p	sf)		
of Storeys ⁴	2,000	2,500	3,000	3,500	4,000		
5.5 Inch Flat, 6-Inch Waffle Grid, or 6 Inch Screen Grid ICF Wall Thickness ⁵							
One Storey ⁶	15	12	10	9	8		
Two Storey ⁶	20	16	13	12	10		
7.5-Inch Flat or 8	B-Inch Waffle-Grid	or 8-Inch Screen-	Grid ICF Wall Thick	kness⁵			
One Storey ⁷	18	14	12	10	8		
Two Storey ⁷	24	19	16	14	12		
9.5-Inch Flat ICF	Wall Thickness ⁵						
One Storey	20	16	13	11	10		
Two Storey	27	22	18	15	14		

Prescriptive Method - TABLE 3.1
APPLICABILITY LIMITS
FOOTINGS FOR ICF WALLS 1,2,3 (Inches)

For SI: 1 *foot* = 0.3048 *m*; 1 *inch* = 25.4 *mm*; 1 *psf* = 47.8804 *Pa*

- 1-Minimum footing thickness shall be the greater of one-third of the footing width, 6 inches (152 mm), or 11 inches (279 mm) when a dowel is required in accordance with Section 6.0.
- 2-Footings shall have a width that allows for a nominal 2-inch (51-mm) projection from either face of the concrete in the wall to the edge of the footing.
- 3-Table values are based on 32 ft (9.8 m) building width (floor and roof clear span).
- 4-Basement walls shall not be considered as a story in determining footing widths.
- 5-Actual thickness is shown for flat walls while nominal thickness is given for waffle- and screen-grid walls. Refer to Section 2.0 for actual waffle- and screen-grid thickness and dimensions.
- 6-Applicable also for 7.5-inch (191-mm) thick or 9.5-inch (241-mm) thick flat ICF foundation wall supporting 3.5-inch (88.9-mm) thick flat ICF stories.
- 7-Applicable also for 9.5-inch (241-mm) thick flat ICF foundation wall story supporting 5.5-inch (140-mm) thick flat ICF stories.

2. Foundations erected on soils with a bearing value of less than 2,000 psf (96 KPa) shall be designed in accordance with accepted engineering practice.



B2.1.3.1 – ICF Foundation Wall-to-Footing Connection

[Prescriptive Method – 6.1]

- 1. No vertical reinforcement (i.e. dowels) across the joint between the foundation wall and the footing is required when one of the following exists:
 - The unbalanced backfill height does not exceed 4 feet (1.2 m)
 - The interior floor slab is installed in accordance with Figure 3.3 before backfilling.
 - Temporary bracing at the bottom of the foundation wall is erected before backfilling and remains in place during construction until an interior floor slab is installed in accordance with Figure 3.3 or the wall is backfilled on both sides (i.e. stem wall).
- 2. For foundation walls that do not meet one of the above requirements, vertical reinforcement (i.e. dowel) shall be installed across the joint between the foundation wall and the footing at 48 inches (1.2 m) on center in accordance with Figure 6.1.
- 3. Vertical reinforcement (i.e. dowels) shall be provided for all foundation walls for buildings located in regions with 3 second gust design wind speeds greater than 130 mph (209 km/hr) or located in Seismic Design Categories D1 and D2 at 18 inches (457 mm) on center.

Exception: The foundation wall's vertical wall reinforcement at intervals of 4 feet (1.2 m) on center shall extend 8 inches (203 mm) into the footing in lieu of using a dowel as shown in Figure 6.1.

B2.1.4 – Foundation Wall Requirements

Crawlspace Walls

[Prescriptive Method – 3.2.2]

Applicable to walls 5 feet (1.5m) or less in height with a maximum unbalanced backfill height of 4 feet (1.2m) for a one-storey construction with floor bearing on top of crawlspace wall.

- 1. ICF crawlspace walls shall be laterally supported at the top and bottom of the wall in accordance with Section 6.0.
- 2. A minimum of one horizontal no. 4 bar shall be placed within 12 inches (305mm) of the top of the crawlspace wall.



3. Vertical reinforcement shall be as per table 3.2 (below). For crawlspace walls carrying ICF wall on top, vertical reinforcement shall be the greater of that required in table 3.2 or table 4.2 in the following section

	ICF CI	RAWLSPACE WALLS 1	2,3,4,5,6			
		MINIMUM VERTICAL REINFORCEMENT				
SHAPE OF	WALL	MAXIMUM	MAXIMUM	MAXIMUM		
CONCRETE	THICKNESS ⁷	EQUIVALENT	EQUIVALENT	EQUIVALENT		
WALLS	(inches)	FLUID DENSITY	FLUID DENSITY	FLUID DENSITY		
		30 pcf	45 pcf	60 pcf		
Flat	3.5 ⁸	#3 @ 16";	#3 @ 18″;	#3 @ 12″;		
		#4 @ 32″	#4 @ 28"; #5@38"	#4 @ 22"; #5 @ 28"		
	5.5	#3 @ 24";	#3 @ 24″;	#3 @ 24″;		
		#4 @ 48″	#4 @ 48″	#4 @ 48″		
	7.5	N/R	N/R	N/R		

Prescriptive Method - TABLE 3.2 MINIMUM VERTICAL WALL REINFORCEMENT FOR ICF CRAWLSPACE WALLS 1,2,3,4,5,6

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 N/R indicates no vertical wall reinforcement is required.
- 3 Spacing of rebar shall be permitted to be multiplied by 1.5 when reinforcing steel with a minimum yield strength of 60,000 psi (414 MPa) is used. Reinforcement, when required, shall not be less than one #4 bar at 48 inches (1.2 m) on center.
- 4 Applicable only to crawlspace walls 5 feet (1.5 m) or less in height with a maximum unbalanced backfill height of 4 feet (1.2 m).
- 5 Interpolation shall not be permitted.
- 6 Walls shall be laterally supported at the top before backfilling.
- 7 Actual thickness is shown for flat walls while nominal thickness is given for waffle-and screen-grid walls. Refer to Section 2.0 for actual waffle- and screen-grid thickness and dimensions.
- 8 Applicable only to one-story construction with floor bearing on top of crawlspace wall.



Basement Walls

[Prescriptive Method – 3.2.3]

- 1. Basement walls shall be laterally supported at the top and bottom of the wall in accordance with section 6.0.
- 2. Minimum horizontal reinforcement shall be as per table 3.3 (below)

MINIMUM HORIZONTAL WALL REINFORCEMENT FOR ICF BASEMENT WALLS				
MAXIMUM HEIGHT OF BASEMENT WALL FEET (METERS)	LOCATION OF HORIZONTAL REINFORCEMENT			
8 (2.4)	One No.4 bar within 12 inches (305 mm) of the top of the wall storey and one No.4 bar near mid-height of the wall story			
9 (2.7)	One No.4 bar within 12 inches (305 mm) of the top of the wall storey and one No.4 bar near third points in the wall story			
10 (3.0)	One No.4 bar within 12 inches (305 mm) of the top of the wall storey and one No.4 bar near third points in the wall story			

Prescriptive Method - TABLE 3.3

For SI: 1 foot = 0.3048 m; 1 inch = 25.4 mm; 1 pcf = 16.0179 kg/m^3

Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength from 40,000 psi (276 MPa) and concrete with a minimum concrete compressive strength of 2,500 psi (17.2 Mpa)

3. Vertical wall reinforcement shall be as per the following tables:

- a) Prescriptive Method Table 3.4 For use with Amvic 6 inch (152 mm) basement walls.
- b) Prescriptive Method Table 3.5 For use with Amvic 8 inch (203 mm) basement walls.
- c) Prescriptive Method Table 3.6 For use with Amvic 10 inch (254 mm) basement walls.



		MINIMUM VERTICAL REINFORCEMENT					
	MAXIMUM	MAXIMUM	MAXIMUM	MAXIMUM			
MAX WALL	UNBALANCED	EQUIVALENT	EQUIVALENT	EQUIVALENT			
HEIGHT	BACKFILL	FLUID	FLUID	FLUID			
(feet)	HEIGHT 6	DENSITY	DENSITY	DENSITY			
	(feet)	30 pcf	45 pcf	60 pcf			
	4	#4@48″	#4@48″	#4@48″			
	5	#4@48″	#3@12"; #4@22";	#3@8″; #4@14″;			
8			#5@32″; #6@40″	#5@20″; #6@26″			
	6	#3@12"; #4@22";	#3@8″; #4@14″;	#3@6"; #4@10";			
		#5@30"; #6@40"	#5@20 [″] ; #6@24 [″]	#5@14″; #6@20″			
	7	#3@8″; #4@14″;	#3@5″; #4@10″;	#3@4″; #4@6″;			
		#5@22"; #6@26"	#5@14″; #6@18″	#5@10 [″] ; #6@14″			
	4	#4@48″	#4@48″	#4@48″			
9	5	#4@48″	#3@12"; #4@20";	#3@8″; #4@14″;			
			#5@28″; #6@36″	#5@20″; #6@22″			
	6	#3@10"; #4@20";	#3@6″; #4@12″;	#4@8″; #5@14″;			
		#5@28"; #6@34"	#5@18″; #6@20″	#6@16″			
	7	#3@8″; #4@14″;	#4@8"; #5@12";	#4@6″; #5@10″;			
		#5@20"; #6@22"	#6@16″	#6@12″			
	8	#3@6″; #4@10″;	#4@6"; #5@10";	#4@4″; #5@6″;			
		#5@14"; #6@16"	#6@12″	#6@8″			
10	4	#4@48″	#4@48″	#4@48″			
	5	#4@48″	#3@10"; #4@18";	#3@6″; #4@14″;			
			#5@26"; #6@30"	#5@18″; #6@20″			
	6	#3@10"; #4@18";	#3@6″; #4@12″;	#3@4"; #4@8";			
		#5@24"; #6@30"	#5@16"; #6@18"	#5@12 [″] ; #6@14″			
	7	#3@6″; #4@12″;	#3@4"; #4@8";	#4@6″; #5@8″;			
		#5@16"; #6@18"	#5@12″	#6@10″			
	8	#3@4"; #4@8";	#4@6"; #5@8";	#4@4″; #5@6″;			
		#5@12"; #6@14"	#6@12″	#6@8″			
	9	#3@4″; #4@6″;	#4@4"; #5@6";	#5@4"; #6@6"			
		#5@10"; #6@12"	#6@8″				

Prescriptive Method - TABLE 3.4 MINIMUM VERTICAL WALL REINFORCEMENT FOR 5.5 inch (140 mm) THICK FLAT ICF BASEMENT WALLS 1,2,3,4,5

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Spacing of rebar shall be permitted to be multiplied by 1.5 when reinforcing steel with a minimum yield strength of 60,000 psi (414 MPa) is used. Reinforcement shall not be less than one #4 bar at 48 inches (1.2 m) on center.
- 3 Deflection criterion is L/240, where L is the height of the basement wall in inches.
- 4 Interpolation shall not be permitted.
- 5 Walls shall be laterally supported at the top before backfilling.
- 6 Refer to Section 1.0 for the definition of unbalanced backfill height.



		MINIMUM VERTICAL REINFORCEMENT					
	MAXIMUM	MAXIMUM	MAXIMUM	MAXIMUM			
MAX WALL	UNBALANCED	EQUIVALENT	EQUIVALENT	EQUIVALENT			
HEIGHT	BACKFILL	FLUID	FLUID	FLUID			
(feet)	HEIGHT 7	DENSITY	DENSITY	DENSITY			
	(feet)	30 pcf	45 pcf	60 pcf			
8	4	N/R	N/R	N/R			
	5	N/R	N/R	N/R			
	6	N/R	N/R	N/R			
	7	N/R	#4@14"; #5@20";	#4@10"; #5@16";			
			#6@28″	#6@20″			
9	4	N/R	N/R	N/R			
	5	N/R	N/R	N/R			
	6	N/R	N/R	#4@14"; #5@20";			
				#6@28″			
	7	N/R	#4@12"; #5@18";	#4@8″; #5@14″;			
			#6@26″	#6@18″			
	8	#4@14″; #5@22″;	#4@8″; #5@14″;	#4@6"; #5@10";			
		#6@28″	#6@18″	#6@14″			
10	4	N/R	N/R	N/R			
	5	N/R	N/R	N/R			
	6	N/R	N/R	#4@12″; #5@18″;			
				#6@26″			
	7	N/R	#4@12"; #5@18";	#4@8″; #5@12″;			
			#6@24″	#6@18″			
	8	#4@12"; #5@20";	#4@8″; #5@12″;	#4@6″; #5@8″;			
		#6@26″	#6@16″	#6@12″			
	9	#4@10"; #5@14";	#4@6″; #5@10″;	#4@4″; #5@6″;			
		#6@20″	#6@12″	#6@10″			

Prescriptive Method - TABLE 3.5 MINIMUM VERTICAL WALL REINFORCEMENT FOR 7.5 inch (191 mm) THICK FLAT ICF BASEMENT WALLS 1,2,3,4,5,6

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Spacing of rebar shall be permitted to be multiplied by 1.5 when reinforcing steel with a minimum yield strength of 60,000 psi (414 MPa) is used. Reinforcement, when required, shall not be less than one #4 bar at 48 inches (1.2 m) on center.
- 3 N/R indicates no reinforcement is required.
- 4 Deflection criterion is L/240, where L is the height of the basement wall in inches.
- 5 Interpolation shall not be permitted.
- 6 Walls shall be laterally supported at the top before backfilling.
- 7 Refer to Section 1.0 for the definition of unbalanced backfill height.



		MINIMUM VERTICAL REINFORCEMENT				
MAX WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT ⁷ (feet)	MAXIMUM EQUIVALENT FLUID DENSITY 30 pcf	MAXIMUM EQUIVALENT FLUID DENSITY 45 pcf	MAXIMUM EQUIVALENT FLUID DENSITY 60 pcf		
8	4	N/R	N/R	N/R		
	5	N/R	N/R	N/R		
	6	N/R	N/R	N/R		
	7	N/R	N/R	N/R		
	4	N/R	N/R	N/R		
9	5	N/R	N/R	N/R		
	6	N/R	N/R	N/R		
	7	N/R	N/R	#4@12″; #5@18″; #6@26″		
	8	N/R	#4@12″; #5@18″; #6@26″	#4@8″; #5@14″; #6@18″		
10	4	N/R	N/R	N/R		
	5	N/R	N/R	N/R		
	6	N/R	N/R	#4@18″; #5@26″; #6@36″		
	7	N/R	N/R	#4@10″; #5@18″; #6@24″		
	8	N/R	#4@12″; #5@16″; #6@24″	#4@8″; #5@12″; #6@16″		
	9	N/R	#4@8″; #5@12″; #6@18″	#4@6″; #5@10″; #6@12″		

Prescriptive Method - TABLE 3.6 MINIMUM VERTICAL WALL REINFORCEMENT FOR 9.5 inch (241 mm) THICK FLAT ICF BASEMENT WALLS 1,2,3,4,5,6

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Spacing of rebar shall be permitted to be multiplied by 1.5 when reinforcing steel with a minimum yield strength of 60,000 psi (414 MPa) is used. Reinforcement, when required, shall not be less than one #4 bar at 48 inches (1.2 m) on center.
- 3 N/R indicates no reinforcement is required.
- 4 Deflection criterion is L/240, where L is the height of the basement wall in inches.
- 5 Interpolation shall not be permitted.
- 6 Walls shall be laterally supported at the top before backfilling.
- 7 Refer to Section 1.0 for the definition of unbalanced backfill height.



Seismic Requirements for Basement Walls

[Prescriptive Method – 3.2.4]

- 1. Concrete foundation walls supporting above-grade ICF walls in Seismic Design Category C shall be reinforced with minimum No. 5 rebar at 24 inches (610 mm) on center (both ways) or a lesser spacing if required by Tables 3.2 through 3.6
- 2. Concrete foundation walls supporting above grade ICF walls in Seismic Design Categories D1 and D2 shall be reinforced with minimum No. 5 rebar at a maximum spacing of 18 inches (457 mm) on center (both ways) or a lesser spacing if required by Tables 3.2 through 3.6 and the minimum concrete compressive strength shall be 3,000 psi (20.5 MPa). Vertical reinforcement shall be continuous with ICF above grade wall vertical reinforcement. Alternatively, the reinforcement shall extend a minimum of 40db into the ICF above grade wall, creating a lap-splice with the above-grade wall reinforcement or extend 24 inches (610 mm) terminating with a minimum 90° bend of 6 inches in length.



B2.1.5 – Above Grade Walls

Wind Pressures

[Prescriptive Method – 4.1]

1. Design Wind pressures of table 4.1 (below) shall be used to determine the vertical wall reinforcement requirements.

WIND		DE	SIGN WIND PR	ESSURE (psf)			
SPEED		ENCLOSED ²			PARTIALLY ENCLOSED		
(mph)		Exposure ³		Exposure ³			
	В	С	D	В	С	D	
85	18	24	29	23	31	37	
90	20	27	32	25	35	41	
100	24	34	39	31	43	51	
110	29	41	48	38	52	61	
120	35	48	57	45	62	73	
130	41	56	66	53	73	854	
140	47	65	77	61	844	994	
150	54	75	884	70	964	1144	

Prescriptive Method - TABLE 4.1 DESIGN WIND PRESSURE FOR USE WITH MINIMUM VERTICAL WALL REINFORCEMENT TABLES FOR ABOVE GRADE WALLS¹

For SI: 1 *psf* = 0.0479 *kN/m2*; 1 *mph* = 1.6093 *km/hr*

- 1 This table is based on ASCE 7-98 components and cladding wind pressures using a mean roof height of 35 ft (10.7 m) and a tributary area of 10 ft2 (0.9 m2).
- 2 Enclosure Classifications are as defined in Section 1.5.
- 3 Exposure Categories are as defined in Section 1.5.
- 4 For wind pressures greater than 80 psf (3.8 kN/m2), design is required in accordance with accepted practice and approved manufacturer guidelines.
 - 2. If relying on fastest mile speed maps or design provisions based on fastest wind speeds, the designer should convert wind speeds to 3 second gust wind in accordance with Table C1.1 for use with the given tables in this section.

Prescriptive Method - TABLE C1.1 WIND SPEED CONVERSIONS								
Fastest Mile (mph)	70	75	80	90	100	110	120	130
3-second Gust (mph)	3-second Gust (mph) 85 90 100 110 120 130 140 150							



DESIGN			MINI	MUM VERTICAL	REINFORCEME	NT ^{4,5}	
WIND PRESSURE (TABLE 4.1)	MAXIMUM WALL HEIGHT PER STORY	SUPPORTIN NON-LOA W/	NG ROOF OR ND-BEARING All	SUPPORT FRAME SEC AND I	Ing Light Cond Story Roof	SUPPORTING STORY AND R	GICF SECOND LIGHT FRAME OOF
(psf)	(feet)		MI	NIMUM WALL TH	ICKNESS (inch	es)	
		3.5	5.5	3.5	5.5	3.5	5.5
20	8	#4@48″	#4@48″	#4@48″	#4@48″	#4@48″	#4@48″
	9	#4@48″	#4@48″	#4@48″	#4@48″	#4@48″	#4@48″
	10	#4@38″	#4@48″	#4@40″	#4@48″	#4@42″	#4@48″
30	8	#4@42″	#4@48″	#4@46″	#4@48″	#4@48″	#4@48″
	9	#4@32;″ #5@48″	#4@48″	#4@34″; #5@48″	#4@48″	#4@34″; #5@48″	#4@48″
	10	Design Required	#4@48″	Design Required	#4@48″	Design Required	#4@48″
40	8	#4@30″; #5@48″	#4@48″	#4@30″; #5@48″	#4@48″	#4@32″; #5@48″	#4@48″
	9	Design Required	#4@42″	Design Required	#4@46″	Design Required	#4@48″
	10	Design Required	#4@32″; #5@48″	Design Required	#4@34″; #5@48″	Design Required	#4@38″
50	8	#4@20″; #5@30″	#4@42″	#4@22″; #5@34″	#4@46″	#4@24″; #5@36″	#4@48″
	9	Design Required	#4@34″; #5@48″	Design Required	#4@34″; #5@48″	Design Required	#4@38″
	10	Design Required	#4@26″; #5@38″	Design Required	#4@26″; #5@38″	Design Required	#4@28″; #5@46″
60	8	Design Required	#4@34″; #5@48″	Design Required	#4@36″	Design Required	#4@40″
	9	Design Required	#4@26″; #5@38″	Design Required	#4@28″; #5@46″	Design Required	#4@34″; #5@48″
	10	Design Required	#4@22″; #5@34″	Design Required	#4@22″; #5@34″	Design Required	#4@26″; #5@38″
70	8	Design Required	#4@28″; #5@46″	Design Required	#4@30″; #5@48″	Design Required	#4@34″; #5@48″
	9	Design Required	#4@22″; #5@34″	Design Required	#4@22″; #5@34″	Design Required	#4@24″; #5@36″
	10	Design Required	#4@16″; #5@26″	Design Required	#4@18″; #5@28″	Design Required	#4@20″; #5@30″
80	8	Design Required	#4@26″; #5@38″	Design Required	#4@26″; #5@38″	Design Required	#4@28″; #5@46″
	9	Design Required	#4@20″; #5@30″	Design Required	#4@20″; #5@30″	Design Required	#4@21″; #5@34″
	10	Design Required	#4@14″; #5@24″	Design Required	#4@14″; #5@24″	Design Required	#4@16″; #5@26″

Prescriptive Method - TABLE 4.2 MINIMUM VERTICAL WALL REINFORCEMENT FOR FLAT ICF ABOVE-GRADE WALLS^{1,2,3}

For SI: 1 foot = 0.3048 m; 1 inch = 25.4 mm; 1 mph = 1.6093 km/hr

- 1 This table is based on reinforcing bars with a minimum yield strength of 40,000 psi (276 Mpa) and concrete with a minimum specified compression strength of 2,500 psi (17.2 Mpa)
- 2 Deflection criterion is L/240 where L is the height of the wall storey in inches.
- *3 Interpolation shall not be permitted.*
- 4 Reinforcement spacing for 3.5 inch (88.9 mm) walls shall be permitted to be multiplied by 1.6 when reinforcing steel with a minimum yield strength of 60,000 psi (414 Mpa) is used. Reinforcement shall not be less than one #4 bar at 48 inches (1.2m) on center.
- 5 Reinforcement spacing for 5.5 inch (139.7 mm) walls shall be permitted to be multiplied by 1.5 when reinforcing steel with a minimum yield strength of 60,000 psi (414 Mpa) is used. Reinforcement shall not be less than one #4 bar at 48 inches (1.2m) on center.

6 - A 3.5 inch wall shall not be permitted if wood ledgers are used to support floor or roof loads.



Above Grade Wall Reinforcement

[Prescriptive Method – 4.1]

- 1. Horizontal wall reinforcement shall be required in the form of one No. 4 rebar within 12 inches (305 mm) from the top of the wall, one No. 4 rebar within 12 inches (305 mm) from the finish floor, and one No. 4 rebar near one-third points throughout the remainder of the wall.
- The vertical wall reinforcement shall be as per the Prescriptive Method table
 4.2 (below). This table can be used for Amvic 4 inch (100 mm) and 6 inch (152 mm) above grade ICF walls.

Seismic & Wind Requirements

[Prescriptive Method – 4.1]

- 1. In Seismic Design Category C, the minimum vertical and horizontal reinforcement shall be one No. 5 rebar at 24 inches (610 m) on center or lesser spacing if required by table 4.2.
- 2. In Seismic Design Categories D1 and D2, the minimum vertical and horizontal reinforcement shall be one No. 5 rebar at a maximum spacing of 18 inches (457 mm) on center or lesser spacing if required by table 4.2 and the minimum concrete compressive strength shall be 3,000 psi (20.5 MPa).
- 3. For design wind pressure greater than 40 psf (1.9 kPa) or Seismic Design Category C or greater, all vertical wall reinforcement in the top-most ICF story shall be terminated with a 90 degree bend. The bend shall result in a minimum length of 6 inches (152 mm) parallel to the horizontal wall reinforcement and lie within 4 inches (102 mm) of the top surface of the ICF wall. In addition, horizontal wall reinforcement at exterior building corners shall be terminated with a 90 degree bend resulting in a minimum lap splice length of 40db with the horizontal reinforcement in the intersecting wall. The radius of bends shall not be less than 4 inches (102 mm).



Seismic & Wind Wall Opening Requirements

[Prescriptive Method – 5.1]

1. For minimum amount of solid wall length for different wind pressures, please refer to prescriptive tables 5.1, 5.2A, 5.2B and 5.2C (below).

	SOLID WALL LENGTH ¹						
WIND	VELOCITY PRESSURE (psf)						
SPEED		Exposure ²					
(mph)	В	C	D				
85	14	19	23				
90	16	21	25				
100	19	26	31				
110	23	32	37				
120	27	38	44				
130	32	44	52				
140	37	51	60				
150	43	59	69 ³				

Prescriptive Method - TABLE 5.1 WIND VELOCITY PRESSURE FOR DETERMINATION OF MINIMUM SOLID WALL LENGTH¹

For SI: 1 *psf* = 0.0479 *kN/m2*; 1 *mph* = 1.6093 *km/hr*

- 1 Table values are based on ASCE 7-98 Figure 6-4 wind velocity pressures for low-rise buildings using a mean roof height of 35 ft (10.7 m).
- 2 Exposure Categories are as defined in Section 1.5.
- 3 Design is required in accordance with acceptable practice and approved manufacturer guidelines.



DESIGN VEL	OCITY PRES	SURE (psf)	20	25	30	35	40	45	50	60
WALL CATEGORY	BUILDING SIDE WALL LENGTH, L (feet)	ROOF SLOPE		MINIM	UM SOLID W	ALL LENGTH	ON BUILDIN	G END WALL	(feet)	
	16	≤ 1:12	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
		5:12	4.00	4.00	4.00	4.00	4.00	4.00	4.25	4.50
		7:12 4	4.00	4.25	4.25	4.50	4.75	4.75	5.00	5.50
		12:12 4	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.25
	24	≤ 1:12	4.00	4.00	4.00	4.00	4.00	4.00	4.25	4.50
		5:12	4.00	4.00	4.00	4.25	4.25	4.50	4.50	4.75
		7:12 4	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.25
32		12:12 ⁴	4.75	5.00	5.25	5.75	6.00	6.50	6.75	7.50
	32	≤ 1:12	4.00	4.00	4.00	4.00	4.25	4.25	4.50	4.75
	5:12	4.00	4.00	4.25	4.50	4.50	4.75	5.00	5.25	
One-storey or		7:12 4	4.50	5.00	5.25	5.50	6.00	6.25	6.50	7.25
Top Storey of		12:12 4	5.00	5.50	6.00	6.50	7.00	7.25	7.75	8.75
Two-Storey	40	≤ 1:12	4.00	4.00	4.25	4.25	4.50	4.50	4.75	5.00
		5:12	4.00	4.25	4.50	4.75	4.75	5.00	5.25	5.50
		7:12 ⁴	4.75	5.25	5.75	6.00	6.50	7.00	7.25	8.00
		12:12 4	5.50	6.00	6.50	7.25	7.75	8.25	8.75	10.00
	50	≤ 1:12	4.00	4.25	4.25	4.50	4.75	4.75	5.00	5.50
		5:12	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00
		7:12 ⁴	5.25	5.75	6.25	6.75	7.25	7.75	8.25	9.25
		12:12 4	6.00	6.75	7.50	8.00	8.75	9.50	10.25	11.50
	60	≤ 1:12	4.00	4.25	4.50	4.75	5.00	5.25	5.25	5.75
		5:12	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.75
		7:12 ⁴	5.50	6.25	6.75	7.50	8.00	8.50	9.25	10.25

Prescriptive Method - TABLE 5.2A MINIMUM SOLID END WALL REQUIREMENTS FOR FLAT ICF WALLS (WIND PERPENDICULAR TO RIDGE)1,2,3,4,5

For SI: 1 foot = 0.3048 m; 1 inch = 25.4 mm; 1 psf = 0.0479 kN/m^2

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Table values are based on a 3.5 in (88.9 mm) thick flat wall. For a 5.5 in (139.7 mm) thick flat wall, multiply the table values by 0.9. The adjusted values shall not result in solid wall lengths less than 4 ft.
- 3 Table values are based on a maximum unsupported wall height of 10 ft (3.0 m).
- 4 Values are based on a 30 foot (9.1 m) building end wall width. For a 45 ft (13.7 m) building end wall and roof pitches greater than 7:12, multiply the table values by 1.2. For a 60 ft (18.3 m) building end wall and roof pitches greater than 7:12, multiply the table values by 1.4.
- 5 Linear interpolation shall be permitted.



DESIC		PRESSURE	(psf)20	25	30	35	40	45	50	60
WALL CATEGORY	BUILDING SIDE WALL LENGTH, L (feet)	ROOF SLOPE		MINIM	UM SOLID V	/ALL LENGT	'H on Build	ing end W/	ALL (feet)	
	16	≤ 1:12 5:12 7:12 ⁴ 12:12 ⁴	4.00 4.50 4.50 5.00	4.25 4.75 5.00 5.25	4.50 5.00 5.25 5.75	4.75 5.25 5.75 6.25	5.00 5.50 6.00 6.50	5.25 5.75 6.25 7.00	5.25 6.00 6.75 7.25	5.75 6.75 7.25 8.25
24	24	≤ 1:12 5:12 7:12 ⁴ 12:12 ⁴	4.50 4.75 5.25 5.50	4.75 5.25 5.75 6.25	5.00 5.50 6.25 6.75	5.25 6.00 6.75 7.25	5.50 6.25 7.00 8.00	5.75 6.75 7.50 8.50	6.00 7.00 8.00 9.00	6.75 7.75 9.00 10.25
First Storey	32	≤ 1:12 5:12 7:12 ⁴ 12:12 ⁴	4.75 5.25 5.75 6.25	5.00 5.75 6.50 7.00	5.50 6.25 7.00 7.75	5.75 6.75 7.75 8.50	6.25 7.25 8.25 9.25	6.50 7.50 9.00 10.00	6.75 8.00 9.50 10.75	7.50 9.00 10.75 12.25
Two-Storey 40	40	≤ 1:12 5:12 7:12 ⁴ 12:12 ⁴	5.00 5.50 6.25 7.00	5.50 6.25 7.00 8.00	5.75 6.75 7.75 8.75	6.25 7.25 8.75 9.75	6.75 8.00 9.50 10.75	7.25 8.50 10.25 11.50	7.50 9.00 11.00 12.50	8.50 10.25 12.50 14.25
	50	≤ 1:12 5:12 7:12 ⁴ 12:12 ⁴	5.50 6.00 7.00 7.75	6.00 6.75 8.00 9.00	6.50 7.50 9.00 10.00	7.00 8.25 10.00 11.25	7.50 9.00 10.75 12.25	8.00 9.75 11.75 13.50	8.50 10.50 12.75 14.75	9.50 11.75 14.50 17.00
	60	≤ 1:12 5:12 7:12 ⁴	5.75 6.75 7.75	6.50 7.50 9.00	7.00 8.25 10.00	7.50 9.25 11.00	8.25 10.00 12.25	8.75 10.75 13.25	9.50 11.75 14.50	10.75 13.25 16.75

Prescriptive Method - TABLE 5.2B MINIMUM SOLID END WALL REQUIREMENTS FOR FLAT ICF WALLS (WIND PERPENDICULAR TO RIDGE)1,2,3,4,5

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Table values are based on a 3.5 in (88.9 mm) thick flat wall. For a 5.5 in (139.7 mm) thick flat wall, multiply the table values by 0.9. The adjusted values shall not result in solid wall lengths less than 4 ft.
- 3 Table values are based on a maximum unsupported wall height of 10 ft (3.0 m).
- 4 Values are based on a 30 foot (9.1 m) building end wall width. For a 45 ft (13.7 m) building end wall and roof pitches greater than 7:12, multiply the table values by 1.2. For a 60 ft (18.3 m) building end wall and roof pitches greater than 7:12, multiply the table values by 1.4.
- 5 Linear interpolation shall be permitted.



DESIGN V PRESSU	ELOCITY RE (psf)	20	25	30	35	40	45	50	60
WALL	BUILDING END								
CATEGORY	WALL WIDTH,		MINIMUM SOLID WALL LENGTH ON BUILDING SIDE WALL (feet)						
	W (feet)								
	16	4	4	4	4	4.25	4.25	4.5	4.75
	24	4	4.25	4.5	4.75	4.75	5	5.25	5.5
One Storey of	32	4.5	4.75	5	5.25	5.5	6	6.25	6.75
Top Storey of	40	5	5.5	5.75	6.25	6.75	7	7.5	8.25
Two-Storey	50	5.75	6.25	7	7.5	8.25	8.75	9.5	10.75
	60	6.5	7.5	8.25	9.25	10	10.75	11.75	13.25
	16	4.25	4.5	4.75	5	5.25	5.5	5.75	6.5
	24	4.75	5.25	5.5	6	6.25	6.75	7	8
First Storey of	32	5.5	6	6.5	7	7.5	8	8.75	9.75
Two-Storey	40	6.25	7	7.5	8.25	9	9.75	10.5	12
	50	7.25	8.25	9.25	10.25	11.25	12.25	13.25	15.25
	60	8.5	9.75	11	12.25	13.5	15	16.25	18.75

Prescriptive Method - TABLE 5.2C MINIMUM SOLID WALL LENGTH REQUIREMENTS FOR FLAT ICF WALLS (WIND PARALLEL TO RIDGE)1,2,3,4,5

- 1 Table values are based on reinforcing bars with a minimum yield strength of 40,000 psi (276 MPa) and concrete with a minimum specified compressive strength of 2,500 psi (17.2 MPa).
- 2 Table values are based on a 3.5 in (88.9 mm) thick flat wall. For a 5.5 in (139.7 mm) thick flat wall, multiply the table values by 0.9. The adjusted values may not result in solid wall lengths less than 4 ft.
- 3 Table values are based on a maximum unsupported wall height of 10 ft (3.0 m).
- 4 Table values are based on a maximum 12:12 roof pitch.
- 5 Linear interpolation shall be permitted.
 - 2. Minimum amount of solid wall length for Seismic Design Categories C, D1 and D2 shall be as per table 5.5 (below).



MINIMUM PERCENTAGE OF SOLID WALL LENGTH ALONG EXTERIOR WALL LINES FOR SEISMIC DESIGN CATEGORY C AND D1/2								
ICF WALL TYPE AND	MINIMUM SOLID WALL LENGTH (percent)							
MINIMUM WALL THICKNESS	ONE-STORY OR	WALL SUPPORTING	WALL SUPPORTING					
(inches)	TOP STORY OF	LIGHT FRAME SECOND	ICF SECOND STORY					
	TWO-STORY	STORY AND ROOF	AND ROOF					
Seismic Design Category C ³	20 percent	25 percent	35 percent					
Seismic Design Category D1 ⁴	25 percent	30 percent	40 percent					
Seismic Design Category D24	30 percent	35 percent	45 percent					

Prescriptive Method - TABLE 5.5

For SI: 1 inch = 25.4 mm; 1 mph = 1.6093 km/hr

- 1 Base percentages are applicable for maximum unsupported wall height of 10-feet (3.0-m), light-frame gable construction, all ICF wall types in Seismic Design Category C, and all ICF wall types with a nominal thickness greater than 5.5 inches (140 mm) for Seismic Design Category D1 and D2. These percentages assume that the maximum weight of the interior and exterior wall finishes applied to ICF walls do not exceed 8 psf (0.38 KN/m3)
- 2 For all walls, the minimum required length of solid walls shall be based on the table percent value multiplied by the minimum dimensions of a rectangle inscribing the overall building plan.
- 3 Walls shall be reinforced with minimum No.5 rebar (grade 40 or 60) spaced a maximum of 24 inches (609.6 mm) on center each way or No.4 rebar (Grade 40 or 60) spaced at a maximum of 16 inches (406.4 mm) on center each way.
- 4 Walls shall be constructed with a minimum concrete compressive strength of 3,000 psi (20.7 Mpa) and reinforced with minimum #5 rebar (Grade 60, ASTM A706) spaced a maximum of 18 inches (457.2 mm) on center each way or No. 4 rebar (Grade 60, ASTM A706) spaced at a maximum of 12 inches (304.8 mm) on center each way.
 - 3. The larger amount of solid wall length as required by tables 5.2A, 5.2B, 5.2C and 5.5 shall be used.



B2.1.6 – Floor Joist Connections

[Prescriptive Method – 6.2.2]

1. Wood ledger board shall be anchored to flat ICF walls in accordance with table 6.1 (below).

Prescriptive Method - TABLE 6.1
FLOOR LEDGER-ICF WALL CONNECTION (SIDE-BEARING CONNECTION)
REQUIREMENTS ^{1,2,3}

MAXIMUM FLOOR	Ν	AXIMUM ANCHOR B	OLT SPACING5 (inche	s)
CLEAR SPAN 4	STAGGERED	STAGGERED	TWO	TWO
(feet)	1/2 INCH	5/8 INCH	1/2 INCH	5/8 INCH
	DIAMETER	DIAMETER	DIAMETER	DIAMETER
	ANCHOR	ANCHOR	ANCHOR	ANCHOR
	BOLTS	BOLTS	BOLTS 6	BOLTS 6
8	18	20	36	40
10	16	18	32	36
12	14	18	28	36
14	12	16	24	32
16	10	14	20	28
18	9	13	18	26
20	8	11	16	22
22	7	10	14	20
24	7	9	14	18
26	6	9	12	18
28	6	8	12	16
30	5	8	10	16
32	5	7	10	14

For SI: 1 foot = 0.3048 m; 1 inch = 25.4 mm

- 1 Minimum ledger board nominal depth shall be 8 inches (203 mm). The actual thickness of the ledger board shall be a minimum of 1.5 inches (38 mm). Ledger board shall be minimum No. 2 Grade.
- 2 Minimum edge distance shall be 2 inches (51 mm) for 1/2-inch-(13-mm-) diameter anchor bolts and 2.5 inches (64 mm) for 5/8-inch-(16-mm) diameter anchor bolts.
- 3 Interpolation is permitted between floor spans.
- 4 Floor span corresponds to the clear span of the floor structure (i.e., joists or trusses) spanning between load-bearing walls or beams.
- 5 Anchor bolts shall extend through the ledger to the center of the flat ICF wall thickness or the center of the horizontal or vertical core thickness of the waffle-grid or screen-grid ICF wall system.
- 6 Minimum vertical clear distance between bolts shall be 1.5 inches (38 mm) for 1/2-inch-(13-mm-) diameter anchor bolts and 2 inches (51 mm) for 5/8-inch-(16 mm) diameter anchor bolt
 - 2. Please refer to Prescriptive Method Section 6 for additional requirements on floor, roof, and minimum wall thickness requirements for high wind pressures and seismic design categories C, D1 and D2.



Appendix C – Coursing and Corner Dimensions

No. of	Total	Total	Dlug 2 inch	Dlug 2 inch	Blue 4 inch
10.01	TOLAI	TOLA			
Courses	Height	Height	Height Adjuster	Height Adjuster	Height Adjuster
	(Inch)	(ft - inch)	(Inch)	(Inch)	(Inch)
1	16″	1′4″	18″	19″	20″
2	32″	2′8″	34″	35″	36″
3	48″	4′0″	50″	51″	52″
4	64″	5′4″	66″	67″	68″
5	80″	6´ 8″	82″	83″	84″
6	96″	8´ 0″	98″	99″	100″
7	112″	9´ 4″	114″	115″	116″
8	128″	10′8″	130″	131″	132″
9	144″	12′0″	146″	147″	148″
10	160″	13′4″	162″	163″	164″
11	176″	14′8″	178″	179″	180″
12	192″	16′0″	194″	195″	196″
13	208″	17′4″	210″	211″	212″
14	224″	18′8″	226″	227″	228″
15	240″	20′0″	242″	243″	244″
16	256″	21′4″	258″	259″	260″
17	272″	22′8″	274″	275″	276″
18	288″	24′0″	300″	301″	302″
19	304″	25′4″	306″	307″	308″
20	320″	26′8″	322″	323″	324″

Table C1.1 - Vertical Course Chart for 4, 6 & 8 inch Amvic Blocks

Table C1.2 - Vertical Course Chart for 10 inch Amvic Blocks

No. of Courses	Total Height (Inch)	Total Height (ft _ inch)	Plus 2 inch Height Adjuster	Plus 3 inch Height Adjuster	Plus 4 inch Height Adjuster
1	24″	2´ 0″	26″	27″	28″
2	48″	<u> </u>	50″	51″	52″
3	72″	6´0″	74″	75″	76″
4	96″	8´0″	98″	99″	100″
5	120″	10´0″	122″	123″	124″
6	144″	12´ 0″	146″	147″	148″
7	168″	14´ 0″	170″	171″	172″
8	192″	16´ 0″	194″	195″	196″
9	216″	18´ 0″	218″	219″	220″
10	240″	20´ 0″	242″	243″	244″
11	264″	22´ 0″	266″	267″	268″
12	288″	24´ 0″	290″	291″	292″
13	312″	26´ 0″	314″	315″	316″
14	336″	28´ 0″	338″	339″	340″
15	360″	30´ 0″	362″	363″	364″
16	384″	32´ 0″	386″	387″	388″
17	408″	34´ 0″	410″	411″	412″
18	432″	36´ 0″	434″	435″	436″
19	456″	38´ 0″	458″	459″	460″
20	480″	40′ 0″	482″	483″	484″



Inside - Outside	Outside - Outside	Inside - Inside	Inside -
Corner Dimension	Corner Dimension	Corner Dimension	Corner D
(ft - in)	(ft - in)	(ft - in)	(ft
1´ 4´´(1)	2´ 1´´(1)	7″ (1)	13
1´ 10″ ⁽¹⁾	2´ 7´´(1)	1´ 1´´(1)	13
2´ 4´´ ⁽²⁾	3´ 1 ^{‴ (2)}	1´ 7´´ ⁽²⁾	14
2′10″	3′7″	2′1″	14′
3′4″	4′1″	2′7″	15
3′10″	4′7″	3′1″	15´
4′4″	5´ 1″	3′7″	16
4´ 10″	5′7″	4′1″	16′
5′4″	6′1″	4′7″	17
5´ 10″	6′7″	5΄ 1″	17′
6′4″	7′1″	5′7″	18
6´ 10″	7′7″	6΄ 1″	18′
7′4″	8´ 1″	6′7″	19
7′10″	8′7″	7′1″	19′
8´ 4″	9′1″	7′7″	20
8´ 10″	9′7″	8´ 1″	20′
9′4″	10′1″	8′7″	21
9´ 10″	10′7″	9′1″	21′
10′4″	11´ 1″	9′7″	22
10′10″	11′7″	10′1″	22′
11′4″	12′1″	10′7″	23
11′10″	12′7″	11′1″	23′
12′4″	13′1″	11′7″	24
12′10″	13′7″	12′1″	24′

Table C1.3 -	Preferred 90°	Corner Dimensions	for 4 inch	Amvic Block (3)

Inside - Outside	Outside - Outside	Inside - Inside
Corner Dimension	Corner Dimension	Corner Dimension
(ft - in)	(ft - in)	(ft - in)
13′4″	14′1″	12′7″
13′10	14′7″	13′1″
14′4″	15´ 1″	13′7″
14′10″	15′7″	14′1″
15′4″	16′1″	14′7″
15′10″	16′7″	15′1″
16′4″	17′1″	15′7″
16′10″	17′7″	16′1″
17′4″	18′1″	16′7″
17′10″	18′7″	17′1″
18′4″	19′1″	17′7″
18′10″	19′7″	18′1″
19′4″	20′1″	18′7″
19′10″	20′7″	19′1″
20′4″	21′1″	19′7″
20′10″	21′7″	20′1″
21′4″	22′1″	20′7″
21′10″	22′7″	21′1″
22′4″	23′1″	21′7″
22′10″	23′7″	22′1″
23′4″	24′1″	22′7″
23′10″	24′7″	23′1″
24′4″	25′1″	23′7″
24′10″	25′7″	24′1″

(2) Minimum dimension required for a short corner with a running bond pattern

(3) Red dimensions indicate use of full size Amvic blocks and no cutting required



340

Inside - Outside	Outside - Outside	Inside - Inside	Inside - Outside	Outside - Outside	Inside - Inside
Corner Dimension	Corner Dimension	Corner Dimension	Corner Dimension	Corner Dimension	Corner Dimension
(ft - in)	(ft - in)	(ft - in)	(ft - in)	(ft - in)	(ft - in)
1´ 6´´(1)	2´ 5‴ ⁽¹⁾	0′7″(1)	13′6″	14′5″	12′7″
2′0″(1)	2´ 11´´(1)	1´ 1´´(1)	14´ 0´	14′11″	13′1″
2´ 6 ^{~(2)}	3´ 5 ^{‴ (2)}	1´ 7´´ ⁽²⁾	14΄ 6″	15′5″	13′7″
3′0″	3′11″	2′1″	15′0″	15′11″	14′1″
3′6″	4´ 5″	2′7″	15΄ 6″	16´ 5″	14′7″
4′0″	4′11″	3′1″	16′0″	16′11″	15′1″
4′6″	5´ 5″	3′7″	16′6″	17′5″	15′7″
5´0″	5′11″	4′1″	17′0″	17′11″	16′1″
5′6″	6´ 5″	4′7″	17′6″	18′5″	16′7″
6′0″	6′11″	5´ 1″	18′0″	18′11″	17′1″
6′6″	7′5″	5′7″	18′6″	19′5″	17′7″
7′0″	7′11″	6′1″	19′0″	19′11″	18′1″
7′6″	8´ 5″	6′7″	19′6″	20′5″	18′7″
8´ 0″	8´ 11″	7′1″	20′0″	20′11″	19′1″
8´ 6″	9´ 5″	7′7″	20′6″	21′5″	19′7″
9′0″	9´11″	8´ 1″	21′0″	21′11″	20′1″
9′6″	10′5″	8´7″	21′6″	22′5″	20′7″
10′0″	10′11″	9´ 1″	22′0″	22′11″	21′1″
10′6″	11´ 5″	9′7″	22′6″	23′5″	21′7″
11′0″	11′11″	10′1″	23′0″	23′11″	22′1″
11′6″	12′5″	10′7″	23′6″	24′5″	22′7″
12′0″	12′11″	11′1″	24′0″	24′11″	23′1″
12′6″	13′5″	11′7″	24′6″	25′5″	23′7″
13′0″	13′11″	12′1″	25′0″	25′11″	24′1″

Table C1.4 - Preferred 90° Corner Dimensions for 6 inch Amvic Block (3)

(1) Minimum dimension required for a short corner with a stack joint

(2) Minimum dimension required for a short corner with a running bond pattern





Inside - Inside Corner Dimension

> (ft - in) 12′7″

13′1″

13′7″

14′1″ 14′7″

15′1″

15′7″ 16′1″

16′7″

17′1″

17′7″ 18′1″

18′7″

19′1″ 19′7″

20′1″

20′7″

21′1″

21′7″ 22′1″

22′7″

23′1″ 23′7″

24′1″

Outside - Outside

Corner Dimension (ft - in)

> 14′9″ 15′3″

15′9″

16′ 3″

16′9″ 17′3″

17′9″

18′3″ 18′9″

19′3″

19′9″

20′3″ 20′9″

21′ 3″

21′9″

22′3″ 22′9″

23′ 3″

23′9″

24′3″ 24′9″

25′ 3″

25′9″ 26′3″

Inside - Outside	Outside - Outside	Inside - Inside	Inside - Outside
Corner Dimension	Corner Dimension	Corner Dimension	Corner Dimension
(ft - in)	(ft - in)	(ft - in)	(ft - in)
1′8″(1)	2′9″(1)	0′7″(1)	13′8″
2′ 2″(1)	3′ 3″(1)	1´ 1´´(1)	14´2´
2´ 8 ^{~ (2)}	3´ 9″ ⁽²⁾	1´7´´ ⁽²⁾	14′8″
3′2″	4´ 3″	2′1″	15´ 2″
3′8″	4´ 9″	2′7″	15′8″
4′2″	5′3″	3′1″	16′2″
4′8″	5´ 9″	3′7″	16′8″
5´2″	6´ 3″	4′1″	17´2″
5′8″	6´ 9″	4′7″	17′8″
6′2″	7′3″	5´ 1″	18′2″
6′8″	7′9″	5′7″	18′8″
7´2″	8´ 3″	6′1″	19′2″
7′8″	8´ 9″	6′7″	19′8″
8´ 2″	9´ 3″	7′1″	20′2″
8′8″	9´ 9″	7′7″	20′8″
9´2″	10′3″	8´ 1″	21′2″
9′8″	10′9″	8´7″	21′8″
10′2″	11′3″	9´ 1″	22´2″
10′8″	11´9″	9′7″	22′8″
11´2″	12′3″	10′1″	23′2″
11′8″	12′9″	10′7″	23′8″
12′2″	13′3″	11´1″	24′2″
12′8″	13′9″	11′7″	24′8″
13′2″	14′3″	12′1″	25′2″

Table C1.5 - Preferred 90° Corner Dimensions for 8 inch Amvic Block (3)

(1) Minimum dimension required for a short corner with a stack joint

(2) Minimum dimension required for a short corner with a running bond pattern





Inside - Outside	Outside - Outside	Inside - Inside	In
Corner Dimension	Corner Dimension	Corner Dimension	Co
(ft - in)	(ft - in)	(ft - in)	
1´ 10″ ⁽¹⁾	3´ 1´´ ⁽¹⁾	0´ 7″ ⁽¹⁾	
2′4″(1)	3′7″(1)	1´ 1´´(1)	
2´ 10″ ⁽¹⁾	4´ 1´´(1)	1´7″ ⁽¹⁾	
3′ 4″′(1)	4´7´´(1)	2´ 1 ^{″(1)}	
3´ 10 ^{″′(2)}	5´ 1´´ ⁽²⁾	2´ 7´´ ⁽²⁾	
4′4″	5′7″	3′1″	
4´ 10″	6′1″	3′7″	
5′4″	6′7″	4´ 1″	
5´ 10″	7′1″	4′7″	
6´ 4″	7′7″	5´ 1″	
6´ 10″	8´ 1″	5′7″	
7′4″	8′7″	6′1″	
7′10″	9´ 1″	6′7″	
8´ 4″	9′7″	7′1″	
8´ 10″	10′1″	7′7″	
9′4″	10′7″	8´ 1″	
9´ 10″	11′1″	8´7″	
10′4″	11′7″	9′1″	
10′10″	12′1″	9′7″	
11′4″	12′7″	10′1″	
11´ 10″	13′1″	10′7″	
12′4″	13′7″	11′1″	
12′10″	14′1″	11′7″	
13′4″	14′7″	12′1″	

Table	C1 6 -	Preferred	90° (Corner	Dimensions	for 10) inch	Amvic	
labie	01.0-	FICIEITEU	90 (DIIIICIISIUIIS				DIOCK

Inside - Outside	Outside - Outside	Inside - Inside
Corner Dimension	Corner Dimension	Corner Dimension
(ft - in)	(ft - in)	(ft - in)
13′10″	15′1″	12′7″
14′4′	15′7″	13′1″
14′10″	16′1″	13′7″
15′4″	16′7″	14′1″
15′10″	17′1″	14′7″
16′4″	17′7″	15′1″
16′10″	18′1″	15′7″
17′4″	18′7″	16′1″
17′10″	19′1″	16′7″
18′4″	19′7″	17′1″
18′10″	20′1″	17′7″
19′4″	20′7″	18′1″
19′10″	21′1″	18′7″
20′4″	21′7″	19′1″
20′10″	22′1″	19′7″
21′4″	22′7″	20′1″
21′10″	23′1″	20′7″
22′4″	23′7″	21′1″
22′10″	24′1″	21′7″
23′4″	24′7″	22′1″
23′10″	25′1″	22′7″
24′4″	25′7″	23′1″
24′10″	26′1″	23′7″
25′4″	26′7″	24′1″

(2) Minimum dimension required for a short corner with a running bond pattern





Bay Projection Dimension C	Outside - Outside Bay Dimension A	Inside - Inside Bay Dimension B
(ft - in)	(ft - in)	(ft - in)
10 1/16 [‴] (1)	1´ 6″ ⁽¹⁾	10 9/16 ^{~~} (1)
1´ 2 ⁵ / ₁₆ ^{″ (1)}	2′0″(1)	1´ 4 ⁹ / ₁₆ ″ ⁽¹⁾
1´ 6 ⁹ /16 [″] ⁽²⁾	2´ 6″ ⁽²⁾	1´ 10 ⁹ /16 [‴] ⁽²⁾
1´ 10 ¹³ /16″	3′0″	2´ 4 ⁹ /16 [‴]
2´ 3 1/16″	3′6″	2´ 10 ⁹ /16″
2´ 7 ⁵ / ₁₆ ″	4´ 0‴	3´ 4 ⁹ /16 [‴]
2´ 11 ⁹ /16 [‴]	4´ 6″	3´ 10 ⁹ /16″
3´ 3 ¹³ /16″	5′0″	4´ 4 ⁹ /16 [‴]
3´ 8 ¹ / ₁₆ ‴	5′6″	4´ 10 ⁹ /16″
4´ ⁵ / ₁₆ ″	6´ 0″	5´ 4 ⁹ /16 [‴]
4´ 4 ⁹ / ₁₆ ″	6′6″	5´ 10 ⁹ /16″
4´ 8 ¹³ / ₁₆ ″	7′0″	6´ 4 ⁹ /16 [‴]
5´ 1 1/16″	7′6″	6´ 10 ⁹ /16″
5´ 5 ⁵ /16″	8´ 0″	7´ 4 ⁹ / ₁₆ ″
5´ 9 ⁹ / ₁₆ ″	8´ 6″	7´ 10 ⁹ /16″
6´ 1 ¹³ /16″	9′0″	8´4 ⁹ / ₁₆ ″

Table C1.7 - Preferred 45° Corner Dimensions for 4 inch Amvic Block⁽³⁾

(2) Minimum dimension required for a short corner with a running bond pattern





Bay Projection Dimension C	Outside - Outside Bay Dimension A	Inside - Inside Bay Dimension B
(ft - in)	(ft - in)	(ft - in)
9 13/ ₁₆ (1)	1´ 6 ⁷ / ₁₆ ″ ⁽¹⁾	9 5/ ₁₆ ‴ (1)
1´ 2 1/ ₁₆ ″ (1)	2´ ⁷ / ₁₆ ″ (1)	1´3 ⁵ / ₁₆ [‴] ⁽¹⁾
1 ´ 6 ⁵ / ₁₆ [‴] ⁽²⁾	2´ 6 ⁷ / ₁₆ [‴] ⁽²⁾	1 ´ 9 ⁵ / ₁₆ [‴] ⁽²⁾
1´ 10 ⁹ /16″	3′ 7/16″	2´ 3 ⁵ / ₁₆ ″
2´ 2 ¹³ / ₁₆ ″	3´ 6 ⁷ / ₁₆ ″	2´9 ⁵ / ₁₆ ″
2´7 ^{1/16} ″	4´ ⁷ / ₁₆ ″	3´ 3 ⁵ /16″
2´ 11 ⁵ /16″	4´ 6 ⁷ / ₁₆ ″	3´9 ⁵ / ₁₆ ″
3´ 3 ⁹ / ₁₆ ″	5´ ⁷ / ₁₆ ″	4´ 3 ⁵ / ₁₆ ″
3´7 ¹³ / ₁₆ ″	5´ 6 ⁷ / ₁₆ ″	4´ 9 ⁵ / ₁₆ ″
4´ 1/ ₁₆ ″	6´ ⁷ / ₁₆ ″	5´ 3 ⁵ /16″
4´ 4 ⁵ / ₁₆ ″	6´67/ ₁₆ ″	5´9 ⁵ /16 [″]
4´ 8 ⁹ / ₁₆ ″	7 ′ ⁷ / ₁₆ ″	6´3 ⁵ /16″
5´ ¹³ / ₁₆ ″	7 ′ 6 ⁷ / ₁₆ ″	6´9 ⁵ /16″
5´ 5 1/16″	8´ ⁷ / ₁₆ ″	7´3 ⁵ /16″
5´9 ⁵ / ₁₆ ″	8´ 6 ⁷ / ₁₆ ″	7´9 ⁵ /16″
6´ 3 ⁹ /16″	9′ ⁷ / ₁₆ ″	8´3 ⁵ /16″

Table C1.8 - Preferred 45° Corner Dimensions for 6 inch Amvic Block⁽³⁾

(2) Minimum dimension required for a short corner with a running bond pattern





Bay Projection Dimension C	Outside - Outside Bay Dimension A	Inside - Inside Bay Dimension B
(ft - in)	(ft - in)	(ft - in)
10 3/8 ^{" (1)}	1 ´ 8 ¹ / ₁₆ ^{‴ (1)}	9 5/ ₁₆ ″ (1)
1´ 2 ⁵ /8 [‴] (1)	2´ 2 1/ ₁₆ ‴ (1)	1´3 ⁵ / ₁₆ [‴] ⁽¹⁾
1´ 6 ⁷ /8 [‴] ⁽²⁾	2´ 8 1/16 [‴] ⁽²⁾	1 ´ 9 ⁵ / ₁₆ ″ ⁽²⁾
1´11 ¹/8″	3´2 ¹/16″	2´ 3 ⁵ / ₁₆ ″
2´ 3 ³ /8″	3´ 8 ¹/16″	2´ 9 ⁵ / ₁₆ ″
2´7 ⁵ /8″	4´ 2 ¹/16″	3´ 3 ⁵ / ₁₆ ″
2′11 7/8″	4´ 8 ¹/16″	3´9 ⁵ / ₁₆ ″
3´ 4 ¹/8″	5´ 2 ¹/16″	4´ 3 ⁵ / ₁₆ ″
3´ 8 ³/8″	5´ 8 ¹/16″	4´ 9 ⁵ / ₁₆ ‴
4´ ⁵ /8″	6´ 2 ¹/16″	5´ 3 ⁵ /16 [‴]
4´ 4 ⁷ /8″	6´ 8 ¹/16″	5´9 ⁵ /16 [‴]
4´ 9 1/8″	7´2 ¹/16″	6´ 3 ⁵ / ₁₆ ″
5´ 1 ³/8″	7´ 8 ¹/16″	6´ 9 ⁵ / ₁₆ ″
5´5 ⁵ /8″	8´2 ¹ / ₁₆ ″	7´3 ⁵ / ₁₆ ″
5´97/8″	8´ 8 ¹/16″	7´95/16″
6´2 ¹/8″	9´2 ¹/16″	8´3 ⁵ /16 [‴]

	Table C1.9	- Preferred 45	° Corner Dime	nsions for 8 inc	h Amvic Block ⁽³⁾
--	------------	----------------	---------------	------------------	------------------------------

(2) Minimum dimension required for a short corner with a running bond pattern





Appendix D – Termites and ICF Construction

D1.0 – Termite Types

There are three main types of termites currently found in North America:

- 1. Dampwood termites
- 2. Drywood termites
- 3. Subterranean termites

Dampwood Termites

These are prevalent in the Pacific Northwest and coastal British Columbia and primarily attack decaying wood. Eliminating the moisture source leading to the decay will normally control their spread.

Drywood Termites

This type does not require a significant moisture source. They can fly directly into buildings and start colonies in dry wood. They are found in the southern part of North America such as Hawaii and Mexico. Use of treated wood is usually more effective against this type.

Subterranean Termites

Subterranean termites most commonly live in the soil to avoid temperature extremes as well as obtaining moisture essential to their existence. They can attack any dry wood or other source of cellulose within a foraging distance of their colony such as untreated fence posts, utility poles, cardboard, paper, fiberboard which are close to the ground.

Where a wood source is not in contact with the soil, workers will build earthen 'shelter tubes' over concrete foundation walls or in cracks in the concrete through which they can travel to and from the food source and soil moisture.

Besides gaining entry via wood touching or close to the ground, termites can enter through cracks in concrete foundations and slabs, and through spaces around utility pipes cutting through concrete foundations.

Subterranean termites are the most important type since they cause the most damage to building structures. Within this group the Formosan subterranean termite is the most aggressive and destructive in nature. Formosan termites are typically smaller in size than other species, but can consume more wood faster because of their sheer numbers.





Figure D1.1 – Termites found in North America. Copyright ©2000-2005, University of Hawaii Termite Project, www2.hawaii.edu/~entomol/index.htm

Subterranean Termite Zones of North America



Figure D1.2 – Termite risk map of North America



D1.1 – Termites and ICF construction

The EPS foam and concrete which make up the Amvic ICF do not constitute a food source for any of the three types of termites found in North America. However subterranean termites can burrow through the EPS foam to reach areas of the building structure where there is a food source such as roof wood trusses, wood floor joists and hardwood flooring.

When ICF walls are used below grade in areas of very heavy termite infestations, it becomes more difficult to track their existence since termites can start burrowing through the EPS foam starting from below grade and upwards to the roof without being discovered.

D1.2 – Code Issues and EPS Foam Below Grade

The subterranean termites' ability to burrow through below grade EPS foam undiscovered led several national and local building codes in North America to ban the use of EPS foam below grade in areas considered to be very heavily infested. However the building codes have made exceptions and suggested measures which if used, will make the use of EPS foam acceptable.

D1.2.1 – International Residential Code 2003, Termite Control and EPS Protection

[R320.1] Subterranean termite control.

In areas favorable to termite damage as per table R301.2(1) methods of protection shall be any of the following:

- 1. Chemical soil treatment
- 2. Pressure preservatively treated wood in accordance with AWPA standards
- 3. Naturally termite resistant wood
- 4. Physical barriers such as metal or plastic termite shields
- 5. Any combination of above



[R320.4] Foam Plastic Protection.

In areas where the probability of termite infestation is 'very heavy' as per figure **R301.2(6)** [refer to figure D1.3 below], EPS foam shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below grade. There should be a minimum clearance of at least 6 inches (152 mm) between foam plastics installed above grade and exposed earth.



Note: Lines defining areas are approximate only. Local conditions may be more or less severe than indicated by the region classification.

Figure D1.3 – Illustration R301.2(6) as per IRC 2003

Exceptions:

- 1. Building structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or pressure preservatively treated wood.
- 2. In addition to requirements of R320.1 an approved method of protecting the foam plastic and structure from subterranean termite damage is provided.
- 3. On the interior side of basement walls.


D1.2.2 – National Building Code of Canada 2005, Termite Control and EPS Protection

[NBC 2005 – 9.12.1.1 (2)]

In localities where termite infestation is known to be a problem, all stumps, roots and other wood debris shall be removed from the soil to a depth of not less than 300 mm in unexcavated areas under a building.

[NBC 2005 – 9.3.2.9 (1)]

In localities where termites are known to occur,

- a) clearance between structural wood elements and finished ground level directly below them shall be not less than 450 mm and, except as provided in sentence (2), all sides of the supporting elements shall be visible to permit inspection, or
- b) structural wood elements, supported by elements in contact with the ground or exposed over bare soil, shall be pressure treated with a chemical that is toxic to termites.

[NBC 2005 – 9.3.2.9 (2)]

In localities where termites are known to occur and foundations are insulated or finished in a manner that could conceal termite infestation,

- a) a metal or plastic barrier shall be installed through the insulation and any other separation of finish materials above finished ground level to control the passage of termites behind or through the insulation, separation or finish materials, and
- b) all sides of the finished supporting assembly shall be visible to permit inspection.

D2.0 – Termite Protection and Control

There are several methods for protecting below grade and above grade structures including EPS foam from termites. The following are the most common methods currently being used in the market and are categorized according to their specific application techniques.



D2.1 – Physical Barriers

D2.1.1 – Waterproofing and Termite Barrier System.

Polyguard 650 XT membrane is specifically designed for ICF foundation walls and can be used for foundation waterproofing as well as termite protection.

Compliance of Polyguard 650 XT membranes with building codes issues pertaining to waterproofing and termite protection is covered under the International Code Council *ICC-ES Legacy Report #2136 (Formerly SBCCI Evaluation Report #2136* which can be downloaded from the following website:

www.polyguardproducts.com/products/architectural/datasheets/ICC-ESreport2136.pdf

For more information on Polyguard 650 XT refer to the following website:

www.polyguardproducts.com/products/architectural/icf.htm

D2.1.2 – Chemical Treatment of Soil

Adding chemicals (termiticide) to the soil surrounding the building structure has been a traditional and primary method of termite control. Subsequent follow up treatment at regular periodic intervals is required to continuously keep any termite population near the structure in check.

Certain city by-laws have been known to ban this method in areas where the watertable level is very high and there is an environmental danger of the chemical agents seeping through.

D2.1.3 – Metal Termite Shield

Metal termite shields are physical barriers to termites which prevent them from building invisible tunnels. When installed properly, the metal termite shields will force subterranean termites to build tunnels on the outside of the shields which are easily detected.

Metal shields are installed on top of concrete walls, and are fabricated of sheet metal which is unrolled and attached over the foundation walls. The edges are then bent at a 45 degree angle. Metal shields must be very tightly constructed, and all joints must be completely sealed. Joints may be sealed by soldering, or with a tar-like bituminous compound.





Figure D1.4 – Metal termite shield using copper metal on top of foundation wall. Copyright ©1998-2005, Urban Entomology Program, University of Toronto www.utoronto.ca/forest/termite/termite.htm



Figure D1.5 – Detail of metal shield at corner. Copyright ©1998-2005, Urban Entomology Program, University of Toronto www.utoronto.ca/forest/termite/termite.htm



D2.1.4 – Particle Sized Barrier

A physical barrier consisting of particle-sized rocks, such as crushed basalt, silica sand, natural sand, granite, glass shards, limestone, quartz and coral sand, can be used to prevent termite entry. There are three basic requirements that must exist for a particle sized barrier to be effective:

- 1. Granules size must be small enough so that when compacted together, the space between them is too small for the termites to squeeze through.
- 2. Granules must be big and heavy enough so that the termites can't pick them up and move them using their mandibles.
- 3. Granules must be too hard for the termites to chew.

The current studies conducted by entomologists reveal that particle sizes between 1.4 - 2.8 mm are impenetrable to subterranean termites.

Particle-sized barriers are used under slabs, around foundations, and around plumbing to create a physical barrier against termites.

An example of a successful particle sized barrier is the Basaltic Termite Barrier (BTB) made of crushed and/or sieved basalt. BTB was invented in Hawaii and is currently being used extensively throughout the state for new commercial and residential construction. BTB is made commercially available by Ameron and under license from the University of Hawaii. For more information on the availability of BTB please refer to the following website:

Ameron, Basaltic Termite Barrier (BTB) – www.ameronhawaii.com/plagg.html

D2.1.5 – Termimesh

Termimesh is a marine grade 316 stainless steel wire mesh which protects the foundation walls and slab on grade of a structure from termite penetration. The aperture grille of the mesh is too small for the termites to penetrate and too hard for them to chew. Termimesh will not kill or eliminate termites. It will physically prevent termites from penetrating a building structure.

Termimesh can be installed during construction on the exterior of foundation walls, under the slab on grade, and around service pipes penetrating the structure. For the system to be effective, proper installation is critical. Termimesh can only be installed by licensed professionals who have been trained by the company to specifically install Termimesh.



Compliance of Termimesh with building code requirements for termite protection is covered by the *Southern Building Code legacy report No. 9713B* which can be downloaded from the following website:

www.icc-es.org/reports/pdf_files/SBCCI-ES/9713B.pdf

For more information on this product and its availability please refer to following website:

www.termi-mesh.com

D2.2 – Suppression

D2.2.1 – Termite Baits

Termite bait systems were developed based on the social behavior of insects to groom and feed each other thereby transferring chemical toxicants to a termite colony and eventually eliminating it.

Wood or some other type of cellulose is used in termite baits, to attract foraging termite workers. The cellulose is impregnated with a slow-acting toxicant that cannot be detected by the termites. The toxicant must be slow acting because termites tend to avoid sites where sick and dead termites accumulate. Termite workers feed on the treated material and carry it back to other colony members, where it slowly poisons the termites and eventually reduces or eliminates the entire colony.

Typically, in-ground stations are inserted in the soil next to the structure and in the vicinity of known or suspected sites of termite activity. Initially the stations contain untreated wood to serve as a monitoring device. Once termites locate and start feeding on it, the wood is replaced with the slow acting chemical toxicant. In addition, aboveground stations may be installed inside or on the structure in the vicinity of damaged wood and shelter tubes.





Figure D1.6 – Inserting a termite trap containing wood as bait

Termite baits are used for controlling termite infestations rather than being a barrier to prevent termites from penetrating a structure.

There are several commercial termite bait systems available on the market including:

- 1. Dow AgroSciences LLC Sentricon® Colony Elimination System www.sentricon.com
- 2. FMC Corporation FirstLine® Termite Defense System www.fmc-apgspec.com
- 3. BASF Corporation **Subterfuge® Termite Bait** <u>www.spd.basf-corp.com/default.asp?page=pestpro/products/subterfuge</u>
- 4. Ensystex Inc. EXTERRA[™] Termite Interception and Baiting System <u>www.ensystex.com</u>



D2.2.2 – Trap Treat Release (TTR)

TTR is similar to termite baits in that it uses their social behavior to spread slow acting chemical toxicants into a termite colony.

With TTR, termite traps are placed in suitable locations near the structure. The traps are checked regularly for termite presence. Once termites hit a trap, it is removed and the termites are extracted for treatment. A slow acting chemical toxicant is applied externally to termite bodies as a groomable coating. After treatment the termites are released back to their colonies. Coated termites carry effectively larger loads of toxicant than do bait-fed termites.

These topically treated termites act as a delivery system, spreading the toxicant throughout the colony. Cleaning and grooming by other members of the colony, result in the ingestion of the pesticide by the grooming individuals. After ingestion, the pesticide is further distributed by mutual feeding behaviors. Because of its more efficient delivery system, TTR has better results in the laboratory and field conditions than bait systems.

TTR was developed by Dr. T. G. Myles at the University of Toronto, and was licensed by the University of Toronto Innovations Foundation to FMC Corporation.

D2.3 – Site Management

The following are measures to be taken during construction to reduce the probability of termite infestation in a building structure. These measures are meant to be used **IN ADDITION** to the other termite prevention and control methods discussed above and should not be used nor considered as standalone solutions.

- 1. Building sites should be cleared of stumps, roots or other woody material that remains beneath or adjacent to the building.
- 2. All stakes, forms and building debris should be removed from beneath and adjacent to buildings. Do not backfill over such debris.
- 3. The site should be well drained so that moisture is not retained under, or adjacent to, a building. Downspouts should carry water away from the building.
- 4. No wood (stair supports, posts or other wood) should project through concrete floors or foundations.
- 5. Foundations should be of concrete or masonry, and soil debris should be kept clear of wood resting on them. Make sure foundation wall is high



enough to allow sufficient top soil placement and still leave at least 6-8 inches (15-20 cm) of clearance between the bottom of siding or stucco and the ground.

- 6. Slabs, concrete floors and foundation joints should be sealed against moisture, and regularly inspected for cracks which should be immediately sealed.
- 7. In areas determined to be very heavily infested with termites, it is recommended to remove an 8 inch (20 cm) strip of EPS above the grade line to expose the concrete. Any termite shelter tubes will be clearly visible and the required treatment measures can be adopted.

D2.4 – Recommendations for Termite Prevention and Control

- 1. Wood or cellulose is the main food source for termites. Reducing or eliminating wood structural elements in a building structure, greatly enhances its durability against termite infestation. If wood cannot be eliminated, use treated wood or naturally resistant wood to termites.
- 2. Consider using more than one line of defense from the three different categories of termite control and prevention methods discussed above (Physical Barriers, Suppression and Site Management).
- 3. Always retain the services of licensed/professional Pest Control Operators (PCOs) to implement commercial termite control and prevention methods especially chemical treatment of soils, metal termite shields, termite baits and TTR.
- 4. Monitor the structure on a regular basis and inspect for any signs of termite infestation or damage. This should be performed by professional PCOs. Take remediation action when termites are discovered.



Appendix E – Utility Service Installations

E1.0 – ICF Wall Penetrations

The electrician, plumber, HVAC installer etc. should block out for service penetrations through the walls. This is done after the ICF forms have been stacked and before the concrete is poured. Blocking out for service penetrations is typically carried out by cutting a hole through the ICF forms and inserting a PVC pipe all the way through. The PVC pipe serves as a sleeve for subsequent installation of wiring, hose bibs, cables and other service utilities required for the structure. Foam adhesive can be used to seal the gaps between the PVC pipe and the Amvic ICF EPS panels.



Important Note!

All penetration sleeves should be installed at an angle pointing downward towards the exterior of the building. This is to ensure that if any water accumulates or is trapped in, it will be drained to the outside.

Sleeves should be sealed with a weather tight caulk or foam after all wiring has been installed.



E2.0 – Electrical Installation

E2.1 – Main Entrance Panel

The main electrical panel for a building is typically located internally in an independent room or enclosure. If the main electrical panel is to be installed flush with an exterior wall, build the equivalent of a door buck with the appropriate dimensions. The buck height should be enough to leave a gap of approximately 12-18 inches (30 - 45 cm) above the panel to allow easy access for the electrician to pull wire out of the top and swing it over to be embedded in the ICF EPS above. Wiring can then be carried to the upper floors and attic.

If power is entering from underneath the electrical panel, install sweeps through the foundation/SOG allowing it to enter within the opening formed by the buck.



Figure E1.1 – Main electrical panel installed flush with exterior wall

E2.2 – Electrical Wiring

Wiring is installed in Amvic ICF walls after the concrete is poured by cutting channels in the EPS panels in which the Romex wires are embedded. The most efficient way of cutting the channels is by using a chainsaw with a depth stop installed.



Figure E1.2 – Cutting a channel in the EPS panel using a chainsaw

The Romex wires stay embedded in the EPS panels by friction. In addition, use foam adhesive to glue the wires to the EPS on occasional spots in the same manner staples are used with wiring and conventional framing.

Use protective nail plates over the wiring in places where it could be hit by drywall screws.





Figure E1.3 – Embedding Romex into the EPS panels

E2.3 – Conduit

Conduit is installed in Amvic ICF walls in the same manner as wiring by cutting a channel in the EPS after the walls are poured in which the conduit is embedded.

If the conduits are to be embedded in the concrete cavity, then it is installed prior to the concrete pour including the electrical boxes and sweeps to which the conduit will be attached.

E2.4 – Electric Outlet Boxes

Electric outlet boxes are installed in Amvic ICF after the concrete is poured by cutting out a recess in the EPS panel using a hot knife adjusted for the right depth. The EPS panels on the Amvic ICF are 2.5 inches (63.5 mm) thick, which is enough depth for most electrical boxes.

If electrical boxes of more than 2.5 inches (63.5 mm) depth are required, then installation should be carried out before the concrete is poured as follows:



- 1. Cut a foam plug in the EPS panel and push it back into the wall cavity. This will create a deeper void within which the electrical box will be installed.
- 2. Use foam adhesive to glue the foam plug in place. This will prevent the plug from moving during the concrete pour.
- 3. After the concrete is poured, break out the foam plug embedded in the concrete wall and install the electrical box in place.

E2.4.1 – Attaching the Electrical Box to the Wall

Electrical boxes are held in the ICF wall by:

- 1. Friction with the EPS foam
- 2. Foam adhesive
- 3. Using boxes with flanges on the front and screwing through the flanges into the polypropylene webs. For metal boxes with flanges, use concrete screws (Tapcon or equivalent) and drill through the concrete.



Figure E1.4 – Electric box with flange attached to the webs



Important Note!

DO NOT drill additional holes than what is provided in plastic electric boxes. This will void the UL/ULC rating.



E3.0 – Plumbing

Plumbing is installed in the same manner as conduit and wiring, by cutting channels in the EPS foam after the concrete pour and embedding the pipes. Foam adhesive is used to secure the pipes in place.



Figure E1.5 – Vent pipe embedded in the EPS foam

If brackets for fixtures are required, concrete screws can be used to secure the brackets to the concrete.

Larger diameter plumbing pipes e.g. 3 inch (76 mm) or larger vents can be installed by furring out the ICF wall to accommodate them or chases made of wood or metal in which the pipes are hidden and easily accessed for maintenance.

It is not recommended to place plumbing pipes in the concrete cavity of ICF walls because it creates a weak spot. If it is essential to run the pipes in the concrete cavity for architectural aesthetics, a local licensed/registered engineer should design and/or approve such a detail.

