

# XP® Gypsum Board

## Regular, Fire-Shield® Type X and Fire-Shield® Type C

**PURPLE**   
EVOLVE YOUR WALLS™

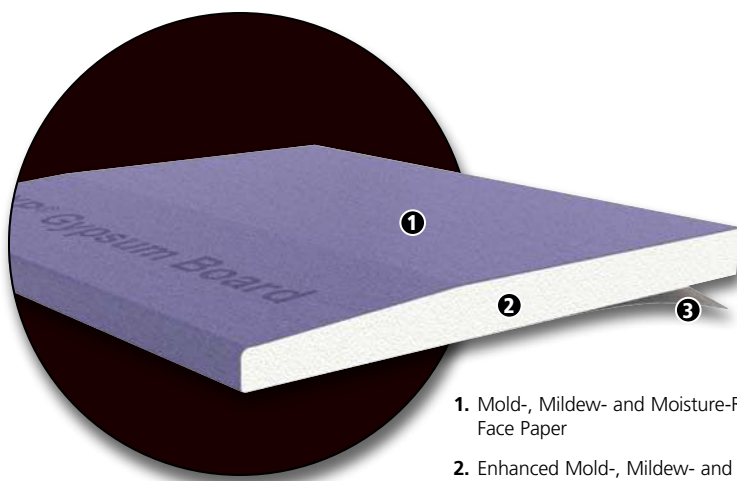
**Gold Bond® BRAND XP® Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant gypsum core with a specially designed PURPLE® paper. The PURPLE face paper is heavy, 100-percent recycled and offers superior mold, mildew and moisture resistance. The 100-percent recycled gray back paper is also mold-, mildew- and moisture-resistant.

Use it on walls and ceilings where framing members are spaced up to 24 in. (610 mm). It is available with either a Regular, Fire-Shield® Type X or Fire-Shield® Type C gypsum core.

For speed of installation, GridMarX® guide marks are printed on the paper surface.

**Sizes:** 1/2 in. (12.7 mm) thick Regular and Type C Boards and 5/8 in. (15.9 mm) thick Type X or Type C Boards are available in 4 ft. (1,219 mm) widths and 8 ft. (2,438 mm) to 12 ft. (3,658 mm) lengths.

**Finishing:** Tapered or square edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds. For optimum mold performance, use ProForm® BRAND XP® All Purpose or ProForm® BRAND XP® Lite Joint Compound.



1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper



**National**   
**Gypsum**®

## Basic Uses

### APPLICATIONS

- Use it on both wood- and steel-framed construction for interior wall and ceiling applications.
- Use it as a tile backerboard in dry areas or areas with limited moisture, such as toilet or sink areas, and wall and ceiling areas above tile in tubs and showers.
- 1/2 in. (12.7 mm) XP® Fire-Shield® Type C, 5/8 in. (15.9 mm) XP® Fire-Shield® Type X, and 5/8 in. (15.9 mm) XP® Fire-Shield® Type C have specially formulated cores designed for use in specific fire-rated assemblies.

### ADVANTAGES

- Suitable for all interior applications, including walls and ceilings. Also use it as a tile backerboard in dry areas and in areas with limited moisture.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features GridMarX® guide marks on the board to allow for faster and more accurate installation.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

## Installation Recommendations

### GENERAL

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4 in. (102 mm) increments. Marks run along the edge in both tapers and at 16 in. (406 mm), 24 in. (610 mm) and 32 in. (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation IMMEDIATELY after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4 in. (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will align within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.

## TECHNICAL DATA

PHYSICAL PROPERTIES				
	XP Gypsum Board	1/2" XP Fire-Shield C Gypsum Board	5/8" XP Fire-Shield Gypsum Board	5/8" XP Fire-Shield C Gypsum Board
<b>Thickness<sup>1</sup>, Nominal</b>	1/2" (12.7 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	1.5 – 1.6 lbs. / sq. ft. (7.32 – 7.81 k/m <sup>2</sup> )	1.9 lbs. / sq. ft. (9.28 k/m <sup>2</sup> )	2.2 lbs. / sq. ft. (10.74 k/m <sup>2</sup> )	2.3 lbs. / sq. ft. (11.23 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Square or Tapered	Square or Tapered	Square or Tapered	Square or Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 107 lbf. (476 N)	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 147 lbf. (654 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 36 lbf. (160 N)	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 46 lbf. (205 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 10/8" (31.8 mm)	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)	≤ 5/8" (15.9 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 77 lbf. (343 N)	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)	≥ 87 lbf. (387 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
<b>Bending Radius</b>	10' (3,048 mm)	10' (3,048 mm)	15' (4,572 mm)	15' (4,572 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .45	R = .45	R = .56	R = .56
<b>Permeance<sup>6</sup></b>	37 perms	37 perms	37 perms	37 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	< 5%	< 5%	< 5%	< 5%
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10	Score of 10	Score of 10	Score of 10
<b>Mold Resistance<sup>8</sup>, ASTM G21</b>	Score of 0	Score of 0	Score of 0	Score of 0
<b>Product Standard Compliance</b>	ASTM C1396	ASTM C1396	ASTM C1396	ASTM C1396
<b>Fire-Resistance Characteristics</b>				
<b>Core Type</b>	Regular	Type C	Type X	Type C
<b>UL Type Designation</b>	N/A	FSMR-C	FSW	FSW-C
<b>Combustibility<sup>2</sup></b>	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A	Class A	Class A	Class A
<b>Flame Spread<sup>3</sup></b>	15	15	15	15
<b>Smoke Development<sup>3</sup></b>	0	0	0	0
<b>Applicable Standards and References</b>				
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products				
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus				
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board				
ASTM C1396 Standard Specification for Gypsum Board				
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber				
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials				
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials				
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C				
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi				
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>				
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>				
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>				
National Gypsum Company, <i>NGC Construction Guide</i>				

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM G21.

- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum board.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Double nailing is an alternate method of attachment devised to minimize nail pops. This system requires doubling up on the field nails. The total quantity of nails used does not double, however, since maximum nail spacing is increased to 12 in. (305 mm) o.c. and conventional nailing is used on the perimeter. Application is accomplished by first single nailing the field of the board, starting at the center and working toward ends and edges. Another nail is then driven in close proximity (2 in. [50.8 mm] to 2-1/2 in. [63.6 mm]) to each of the first nails. The first series of nails are then struck again to ensure the board is drawn tightly to the framing member.
- When using adhesive to attach gypsum board, apply drywall adhesive to the face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

## FINISHING

Joints between XP® Gypsum Board may be finished with either paper tape and ready mix joint compound or fiberglass mesh or paper tape and setting compound, such as ProForm® BRAND Interior Finishing Products.

## DECORATION

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## CRITICAL LIGHTING AREAS

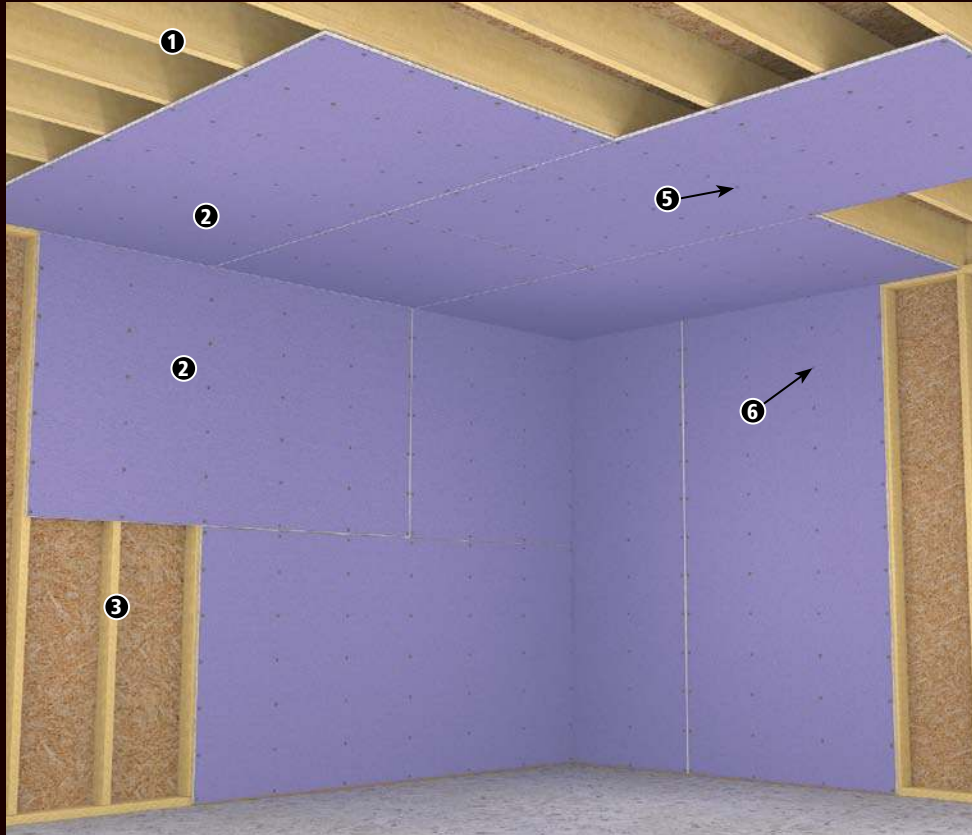
Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

## Limitations

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125°F (52°C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30 ft. (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12 in. (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Apply 1/2 in. (12.7 mm) gypsum board ceilings to be decorated with water-based spray texture perpendicular to the framing spaced a maximum of 16 in. (406 mm) o.c.
- Space supporting framing for single-layer application of 1/2 in. (12.7 mm) gypsum board a maximum of 24 in. (610 mm) o.c.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in pre-rock conditions.
- Do not finish joints until building is properly closed in and conditioned.

# Gold Bond® BRAND XP® Gypsum Board

## STANDARD APPLICATION WITH NAILS – SINGLE LAYER



### Installation Notes

1/2" (12.7 mm) and  
5/8" (15.9 mm) XP® Gypsum Board

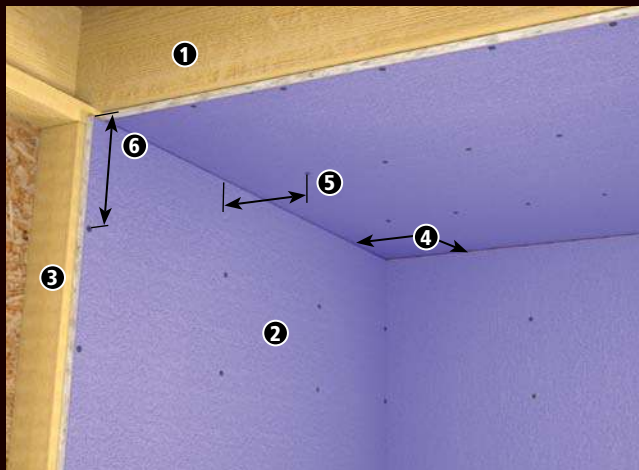
- 24" o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)

- 16" o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)

- Minimum gypsum board nail length 1-3/8"

XP® Boards

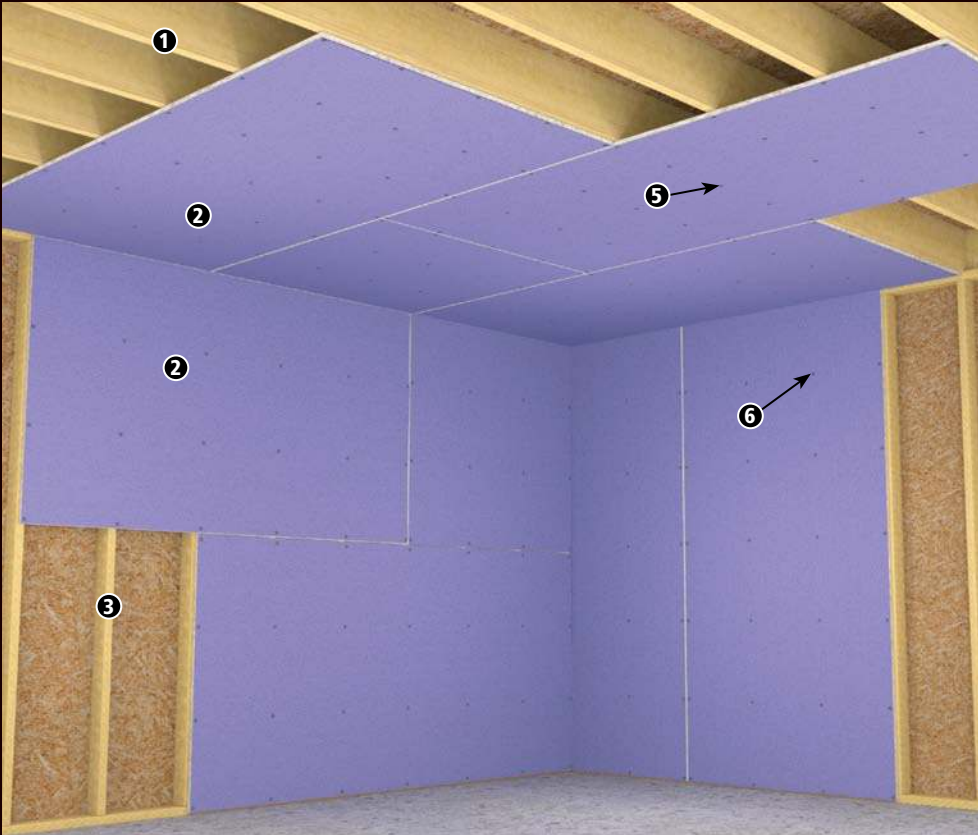
## FLOATING CEILING CORNER – NAIL INSTALLATION



### System Components

1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 7" o.c.
6. Wall: 8" o.c.

STANDARD APPLICATION WITH SCREWS – SINGLE LAYER

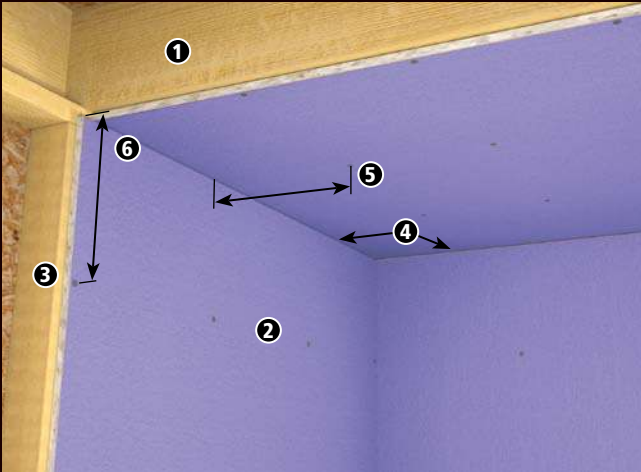


Installation Notes

- 1/2" (12.7 mm) and 5/8" (15.9 mm) XP® Gypsum Board
- 24" o.c. maximum framing spacing
  - Ceiling application (perpendicular)
  - Wall application (perpendicular or parallel)
  - Screw spacing not to exceed 12" o.c.
- 16" o.c. framing spacing
  - Ceiling application (perpendicular or parallel)
  - Wall application (perpendicular or parallel)
- Minimum gypsum board screw length 1-1/8"

XP® Boards

FLOATING CEILING CORNER – SCREW INSTALLATION



System Components

1. Ceiling Joist Framing
2. Gypsum Board
3. Wall Framing
4. Floating Interior Angles
5. Ceiling: 12" o.c.
6. Wall: 16" o.c.  
Floating Ceiling: 12" o.c.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# 5/16" XP® Fire-Shield®

## Gypsum Board

**PURPLE**   
EVOLVE YOUR WALLS™

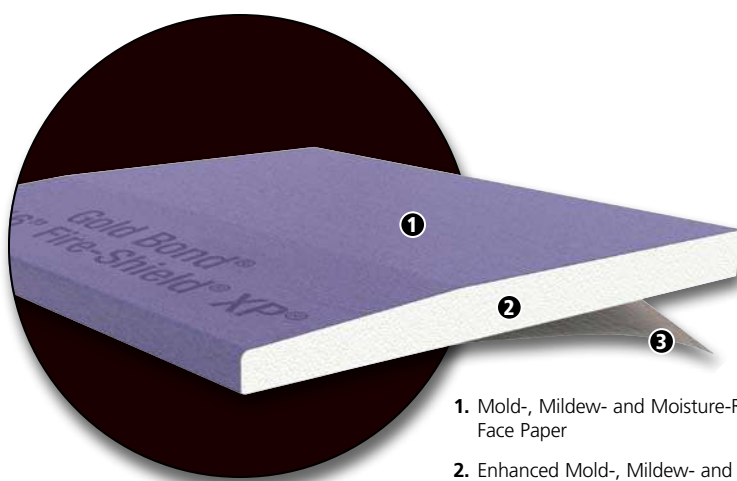
**Gold Bond® BRAND 5/16" XP® Fire-Shield® Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant gypsum core with a specially designed PURPLE® paper.

The PURPLE face paper is a heavy paper that is 100-percent recycled and offers superior mold, mildew and moisture resistance. The 100-percent recycled gray back paper is also mold-, mildew- and moisture-resistant.

Use it for constructing concave and convex corners in multi-layered applications requiring a fire-rated assembly.

**Sizes:** 5/16 in. (7.9 mm) thick boards are available in 4 ft. (1,219 mm) widths and standard lengths of 8 ft. (2,438 mm), 10 ft. (3,048 mm) and 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set® Setting Compounds. For optimum mold performance, use ProForm® BRAND XP® All Purpose or ProForm® BRAND XP® Lite Joint Compounds.



1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper



**National**   
**Gypsum®**

## Basic Uses

### APPLICATIONS

- Use in constructing concave and convex corners in multi-layered applications requiring a fire-rated assembly.

### ADVANTAGES

- Use it in both wood- and metal-framed construction for curved walls providing enhanced moisture and mold resistance.
- 1- and 2-hour fire ratings available.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Easily scored and snapped to exact size without sawing.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

## Installation Recommendations

### GENERAL

- Install gypsum boards in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Locate gypsum board joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while fasteners are being driven. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the facer of the gypsum board. Remove improperly driven nails or screws.
- Cut gypsum board to allow for a minimum 1/4 in. (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum board.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach the gypsum boards and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or Gypsum Association *GA-600 Fire Resistance Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or facer.

## TECHNICAL DATA

PHYSICAL PROPERTIES	
5/16" XP Fire-Shield Gypsum Board	
<b>Thickness<sup>1</sup>, Nominal</b>	5/16" (7.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)
<b>Length<sup>1</sup>, Standard</b>	8' (2,438 mm), 10' (3,048 mm), 12' (3,658 mm)
<b>Weight, Nominal</b>	1.3 – 1.4 lbs. / sq. ft. (6.35 – 6.84 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 62 lbf. (276 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 21 lbf. (93 N)
<b>Humidified Deflection<sup>1</sup></b>	N/A
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 46 lbf. (205 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)
<b>Bending Radius</b>	2' (610 mm)
<b>Thermal Resistance<sup>4</sup></b>	N/A
<b>Permeance<sup>5</sup></b>	22 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	< 5%
<b>Mold Resistance<sup>6</sup>, ASTM D3273</b>	Score of 10
<b>Mold Resistance<sup>7</sup>, ASTM G21</b>	Score of 0
<b>Product Standard Compliance</b>	ASTM C1396
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	N/A
<b>UL Type Designation</b>	FSW
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	15
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1396 Standard Specification for Gypsum Board	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
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Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Tested in accordance with ASTM C518.

5. Tested in accordance with ASTM E96.

6. Tested in accordance with ASTM D3273.

7. Tested in accordance with ASTM G21.

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

## FINISHING

Perform finishing of 5/16" XP® Fire-Shield® Gypsum Board in accordance with GA-214. Joints between boards may be finished with either paper tape and ready mix joint compound or fiberglass mesh or paper tape and setting compound, such as ProForm® BRAND Interior Finishing Products.

## DECORATION

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## CRITICAL LIGHTING AREAS

Wall areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

## Limitations

- Do not use for exterior applications. 5/16" XP Fire-Shield Gypsum Board is intended for interior use only.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum boards to temperatures exceeding 125°F (52°C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in pre-rock conditions.
- Do not finish joints until building is properly closed in and conditioned.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# Hi-Abuse® XP®

## Gypsum Board

**PURPLE**   
EVOLVE YOUR WALLS™

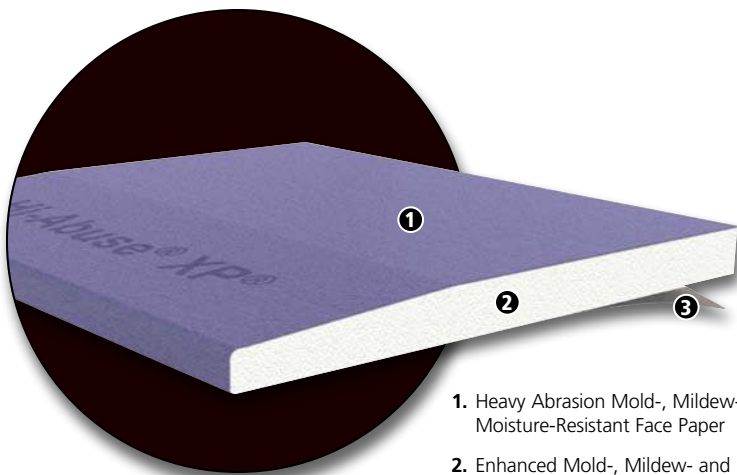
**Gold Bond® BRAND Hi-Abuse® XP® Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant Type X gypsum core with a specially designed PURPLE® paper. The PURPLE face paper is heavy and offers superior abrasion, mold, mildew and moisture resistance. The 100-percent recycled gray back paper is also mold-, mildew- and moisture-resistant.

Use it for interior wall and ceiling applications.

For speed of installation, GridMarX® guide marks are printed on the paper surface.

**Sizes:** 5/8 in. (15.9 mm) thick boards are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds. For optimum mold performance, use ProForm® BRAND XP® All Purpose Joint Compound or ProForm® BRAND XP® Lite Joint Compound.



1. Heavy Abrasion Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Type X Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper



**National**   
**Gypsum®**

**Note:** For abuse and impact test (ASTM C1629) results, see page 388.

## Basic Uses

### APPLICATIONS

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation and mold, mildew and moisture resistance are major concerns.
- Use 5/8 in. (15.9 mm) Hi-Abuse® XP® Gypsum Board where Type X Gypsum Board is specified in certain fire-rated wall assemblies.
- Use as a tile backer board in dry areas or areas with limited moisture, such as toilet and sink areas and wall and ceiling areas above tile in tubs and showers.

### ADVANTAGES

- Provides greater resistance to surface abuse and indentation over standard gypsum board.
- Provides more protection against surface abrasion – stands up to scrapes, scratches and scuffs.
- Resists the growth of mold in accordance with ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold in accordance with ASTM G21 with a score of 0, the best possible score.
- Fire-resistant material with a gypsum core that will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features GridMarX® guide marks on the board to allow for faster and more accurate installation.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

## Installation Recommendations

### GENERAL

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4 in. (102 mm) increments. Marks run along the edge in both tapers and at 16 in. (406 mm), 24 in. (610 mm) and 32 in. (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation IMMEDIATELY after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4 in. (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.

## TECHNICAL DATA

PHYSICAL PROPERTIES	
	Hi-Abuse XP Gypsum Board
<b>Thickness<sup>1</sup>, Nominal</b>	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	2.8 lbs. / sq. ft. (13.67 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 147 lbf. (654 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 46 lbf. (205 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 5/8" (15.9 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 87 lbf. (387 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)
<b>Bending Radius</b>	15' (4,572 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .56
<b>Permeance<sup>6</sup></b>	37 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	< 5%
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10
<b>Mold Resistance<sup>8</sup>, ASTM G21</b>	Score of 0
<b>Surface Abrasion<sup>9</sup></b>	Level 3
<b>Indentation<sup>9</sup></b>	Level 1
<b>Soft-Body Impact<sup>9</sup></b>	Level 2
<b>Hard-Body Impact<sup>9</sup></b>	Level 1
<b>Product Standard Compliance</b>	ASTM C1396
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	15
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1396 Standard Specification for Gypsum Board	
ASTM C1629 Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths.

Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM G21.

9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion),

D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Refer to page 388.

- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum board.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

## FINISHING

Joints between Hi-Abuse® XP® Gypsum Board may be finished with either paper tape and ready mix joint compound or fiberglass mesh or paper tape and setting compound, such as ProForm® BRAND Interior Finishing Products.

## DECORATION

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.



## Limitations

- To maximize abuse resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312 in. design thickness) steel stud is required, as outlined in GA-216.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125°F (52°C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30 ft. (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12 in. (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in pre-rock conditions.
- Do not finish joints until building is properly closed in and conditioned.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

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# Hi-Impact® XP®

## Gypsum Board

**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND Hi-Impact® XP® Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant Type X gypsum core with a specially designed PURPLE® paper. The PURPLE face paper is a heavy paper that is 100-percent recycled and offers superior abrasion, mold, mildew and moisture resistance. The 100-percent recycled gray back paper is also mold-, mildew- and moisture-resistant. Additionally, it has a fiberglass mesh embedded into the core, providing more impact and penetration resistance.

Use it for interior wall and ceiling applications and in areas with limited water exposure.

For speed of installation, GridMarX® guide marks are printed on the paper surface.

**Sizes:** 5/8 in. (15.9 mm) thick boards are available in 4 ft. (1,219 mm) widths and standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds. For optimum mold performance, use ProForm® BRAND XP® All Purpose Joint Compound or ProForm® BRAND XP® Lite Joint Compound.



**National**   
**Gypsum®**

**Note:** For abuse and impact test (ASTM C1629) results, see page 388.

## Basic Uses

### APPLICATIONS

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation, mold, mildew and moisture resistance are major concerns.
- Use 5/8 in. (15.9 mm) Hi-Impact® XP® Gypsum Board where Type X Gypsum Board is specified in certain fire-rated wall assemblies.
- Use it as a tile backer board in dry areas or areas with limited moisture, such as toilet and sink areas and wall and ceiling areas above tile in tubs and showers.

### ADVANTAGES

- Specially designed gypsum core with a built-in fiberglass mesh offers superior protection against impact and penetrations into the wall cavity.
- Provides greater resistance to surface abrasion, indentation, impact and penetration over standard gypsum board.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Easily scored and snapped to exact size without sawing.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

## Installation Recommendations

### GENERAL

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4 in. (102 mm) increments. Marks run along the edge in both tapers and at 16 in. (406 mm), 24 in. (610 mm) and 32 in. (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation IMMEDIATELY after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.
- Cut gypsum board to allow for a minimum 1/4 in. (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these points. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.

## TECHNICAL DATA

PHYSICAL PROPERTIES	
	<b>Hi-Impact XP Gypsum Board</b>
<b>Thickness<sup>1</sup>, Nominal</b>	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	2.8 lbs. / sq. ft. (13.67 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 147 lbf. (654 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 46 lbf. (205 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 5/8" (15.9 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 87 lbf. (387 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)
<b>Bending Radius</b>	15' (4,572 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .56
<b>Permeance<sup>6</sup></b>	37 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	< 5%
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10
<b>Mold Resistance<sup>8</sup>, ASTM G21</b>	Score of 0
<b>Surface Abrasion<sup>9</sup></b>	Level 3
<b>Indentation<sup>9</sup></b>	Level 1
<b>Soft-Body Impact<sup>9</sup></b>	Level 3
<b>Hard-Body Impact<sup>9</sup></b>	Level 3
<b>Product Standard Compliance</b>	ASTM C1396
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	15
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1396 Standard Specification for Gypsum Board	
ASTM C1629 Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths.

Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM G21.

9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion),

D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Refer to page 388.

- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum board.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

## FINISHING

Perform finishing of Hi-Impact® XP® Gypsum Board in accordance with GA-214. Joints between Hi-Impact XP Gypsum Board may be finished with either paper tape and ready mix joint compound or fiberglass mesh tape and setting compound, such as ProForm® BRAND Interior Finishing Products. In most areas to receive final decoration, skim coat the entire surface.

## DECORATION

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

## Limitations

- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312 in. design thickness) steel stud is required, as outlined in GA-216.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125°F (52°C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30 ft. (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12 in. (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in pre-rock conditions.
- Do not finish joints until building is properly closed in and conditioned.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# SoundBreak® XP®

## Gypsum Board

**PURPLE**   
EVOLVE YOUR WALLS™

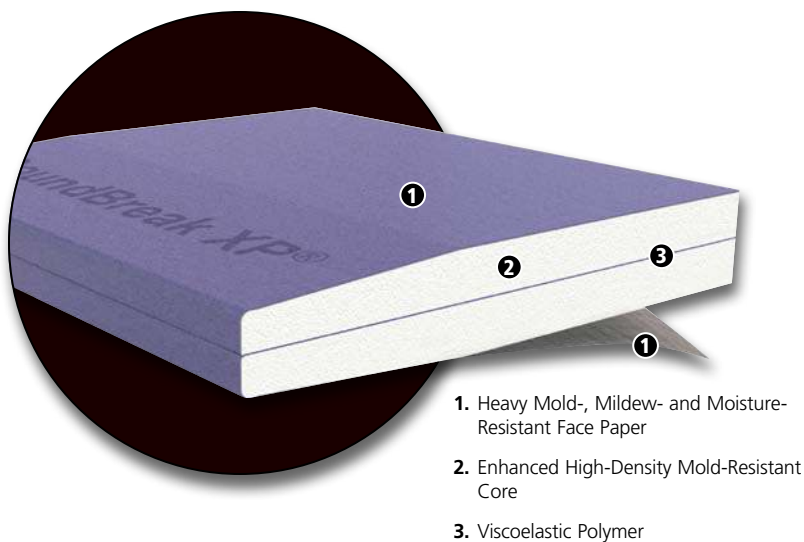
**Gold Bond® BRAND SoundBreak® XP® Gypsum Board** consists of two pieces of high-density, mold-, mildew- and moisture-resistant gypsum board, with a specially designed PURPLE® paper, laminated together with a sound-damping, viscoelastic polymer. This acoustically enhanced, fire-resistant gypsum core is encased in heavy paper that is 100-percent recycled on both sides and offers superior abrasion, mold, mildew and moisture resistance.

Use it for high-rated Sound Transmission Class (STC) rated wall and ceiling assemblies, where sound transmission between rooms or dwelling units is a concern.

For speed of installation, GridMarX® guide marks are printed on the paper surface.

**Sizes:** 1/2 in. (12.7 mm) thick Regular Boards and 5/8 in. (15.9 mm) thick Type X Boards are available in 4 ft. (1,219 mm) widths and standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm). 3/4 in. (19.1 mm) thick Type C SoundBreak Boards are available in 4 ft. (1,219 mm) widths and standard lengths of 8 ft. (2,438 mm) to 10 ft. (3,048 mm).

**Finishing:** Slightly Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds. For optimum mold and mildew performance, use ProForm® BRAND XP® All Purpose Joint Compound or ProForm® BRAND XP® Lite Joint Compound.



**National**   
**Gypsum®**

## Basic Uses

### APPLICATIONS

- Use it for interior wall and ceiling assemblies, where sound transmission between rooms or dwelling units is a concern.
- 5/8 in. (15.9 mm) SoundBreak® XP® Gypsum Board may be used where Type X Gypsum Board is specified in fire-rated assemblies.

### ADVANTAGES

- Provides high-rated Sound Transmission Class (STC) values per an independent third-party acoustical laboratory using ASTM E90 test procedures.
- Achieves high STC values in a thinner wall assembly, increasing usable floor space.
- Provides STC Ratings up to 56 for single-layer, steel stud partitions and up to 67 for area separation walls.
- Superior sound damping, cost-efficient material that finishes easily and decorates in the same manner as standard gypsum board.
- For speed of installation and lower installation costs, vertical board joints do not require acoustical sealant.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Heavy abrasion-resistant paper and dense core provide greater resistance to surface abuse and indentation when tested in accordance with ASTM C1629. (Refer to page 388.)
- Installs like traditional gypsum board without requiring additional clips or channels.
- Cuts by scoring deeply from both sides before snapping or by using a hand or power saw.
- Fire-resistant material will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.

- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Features the GridMarX® guidemarks on the board to allow for faster and more accurate installation.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

## Installation Recommendations

### GENERAL

- Install gypsum board in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum board is to be applied. Remedy all defects prior to installation of the gypsum board.
- GridMarX provides quick identification and uniform nail/screw patterns. Use GridMarX to make accurate cuts without drawing lines. GridMarX guide marks run the length of the board at five points in 4 in. (102 mm) increments. Marks run along the edge in both tapers and at 16 in. (406 mm), 24 in. (610 mm) and 32 in. (813 mm) in the field of the board. The marks cover easily with no bleed-through using standard paint products.
- Apply gypsum board first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring board edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum board on ceilings when installing a vapor retarder behind the gypsum board. Install the insulation IMMEDIATELY after the gypsum board when using loose fill insulation. Avoid installation practices that might allow condensation to form behind boards.

## TECHNICAL DATA

PHYSICAL PROPERTIES			
	1/2" SoundBreak XP Gypsum Board	5/8" SoundBreak XP Gypsum Board	3/4" SoundBreak XP Gypsum Board
<b>Thickness<sup>1</sup>, Nominal</b>	1/2" (12.7 mm)	5/8" (15.9 mm)	3/4" (19.1 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 – 3,658 mm)	8' – 12' (2,438 – 3,658 mm)	8' – 10' (2,438 – 3,048 mm)
<b>Weight, Nominal</b>	1.9 lbs. / sq. ft. (9.28 k/m <sup>2</sup> )	2.2 lbs. / sq. ft. (10.74 k/m <sup>2</sup> )	2.3 lbs. / sq. ft. (11.23 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Slightly Tapered	Slightly Tapered	Slightly Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 167 lbf. (743 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 56 lbf. (249 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 10/8" (31.8 mm)	≤ 5/8" (15.9 mm)	N/A
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 77 lbf. (343 N)	≥ 87 lbf. (387 N)	≥ 87 lbf. (387 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)	≥ 11 lbf. (49 N)
<b>Bending Radius</b>	10' (3,048 mm)	15' (4,572 mm)	N/A
<b>Thermal Resistance<sup>5</sup></b>	R = .45	R = .56	R = .64
<b>Permeance<sup>5</sup></b>	45 perms	37 perms	N/A
<b>Mold Resistance<sup>2</sup>, ASTM D3273</b>	Score of 10	Score of 10	N/A
<b>Mold Resistance<sup>2</sup>, ASTM G21</b>	Score of 0	Score of 0	N/A
<b>Surface Abrasion<sup>9</sup></b>	Level 3	Level 3	N/A
<b>Indentation<sup>9</sup></b>	Level 1	Level 1	N/A
<b>Soft-Body Impact<sup>9</sup></b>	Level 1	Level 2	N/A
<b>Hard-Body Impact<sup>9</sup></b>	N/A	Level 1	N/A
<b>Product Standard Compliance</b>	ASTM C1396, C1766	ASTM C1396, C1766	ASTM C1396, C1766
<b>Fire-Resistance Characteristics</b>			
<b>Core Type</b>	Regular	Type X	SoundBreak
<b>UL Type Designation</b>	N/A	SoundBreak XP	SoundBreak
<b>Combustibility<sup>2</sup></b>	Non-combustible Core	Non-combustible Core	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A	Class A	Class A
<b>Flame Spread<sup>3</sup></b>	15	15	15
<b>Smoke Development<sup>3</sup></b>	0	0	0
<b>Applicable Standards and References</b>			
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products			
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus			
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board			
ASTM C1396 Standard Specification for Gypsum Board			
ASTM C1629 Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels			
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber			
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials			
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials			
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C			
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi			
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>			
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>			
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>			
National Gypsum Company, <i>NGC Construction Guide</i>			

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths.

Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM G21.

9. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion),

D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact).

Refer to page 388.

- Cut gypsum board to allow for a minimum 1/4 in. (6.4 mm) gap between gypsum board and floor to prevent potential wicking of moisture.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Locate gypsum board joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum board in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the board toward the edges and ends. Set fasteners with heads slightly below the surface of the board. Take care to avoid breaking the face paper of the gypsum board. Remove improperly driven nails or screws.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum board.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach gypsum board and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

## FINISHING

Joints between SoundBreak® XP® Gypsum Board may be finished with either paper tape and ready mix joint compound or fiberglass mesh or paper tape and setting compound, such as ProForm® BRAND Interior Finishing Products.

## DECORATION

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum boards prior to texturing.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider using textures to hide these minor visual imperfections. Finish boards to a Level 5 finish, as outlined in GA-214.

## Limitations

- Avoid exposure to excessive or continuous moisture and extreme temperatures. Do not expose gypsum board to temperatures exceeding 125°F (52°C) for extended periods of time.
- Properly ventilate or condition attic spaces to remove moisture buildup above gypsum board ceilings. If required, install a vapor retarder in exterior ceilings behind gypsum board.
- Avoid installing gypsum board directly over insulation blankets with facer flanges placed continuously across the face of the framing members; recess insulation blankets and attach flanges to the sides of framing.
- Isolate gypsum board from contact with building structure in locations where structural movement may impose direct loads on gypsum board assemblies.
- Provide control joints spaced not more than 30 ft. (9,144 mm) where employing long continuous runs of walls, partitions or ceilings without perimeter relief.
- Avoid gypsum board joints within 12 in. (305 mm) of the corners of window or door frames unless installing control joints at these locations.
- In single-ply installation, all ends and edges of gypsum board should occur over framing members or other solid backing except where treated joints occur at right angles to framing or furring members.
- Apply 1/2 in. (12.7 mm) gypsum board ceilings to be decorated with water-based spray texture perpendicular to the framing spaced a maximum of 16 in. (406 mm) o.c.
- Space supporting framing for single-layer application of 1/2 in. (12.7 mm) gypsum board a maximum of 24 in. (610 mm) o.c.
- Do not use boards as a nailing base as they are nonstructural.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in pre-rock conditions.
- Do not finish joints until building is properly closed in and conditioned.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).

# Shaftliner XP®

## Gypsum Board

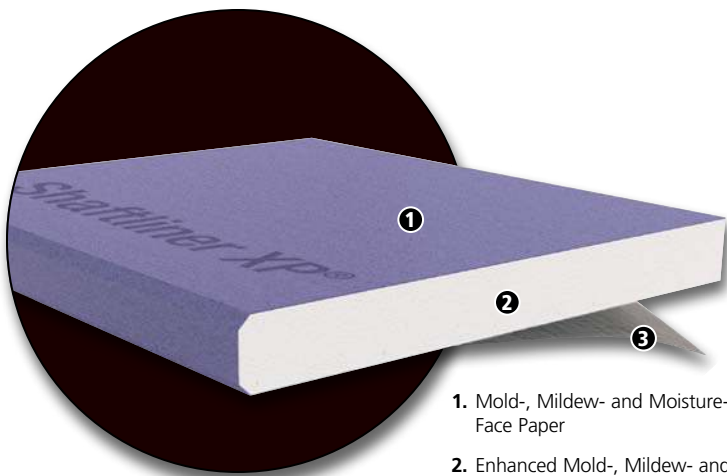
**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND Shaftliner XP® Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant gypsum core with a specially designed, 100-percent recycled PURPLE® paper on the face and back sides. The face paper is folded around the long edges to reinforce and protect the core, and the ends are cut square and finished smooth. Long edges are double beveled for ease of installation.

Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 hr.).

To help speed installation, GridMarX® guide marks are printed on the paper surface.

**Sizes:** 1 in. (25.4 mm) thick shaftliner is available in 2 ft. (610 mm) widths and standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).



1. Mold-, Mildew- and Moisture-Resistant Face Paper
2. Enhanced Mold-, Mildew- and Moisture-Resistant Type X Core
3. Heavy Mold-, Mildew- and Moisture-Resistant Back Paper



**National**   
**Gypsum**®

## Basic Uses

### APPLICATIONS

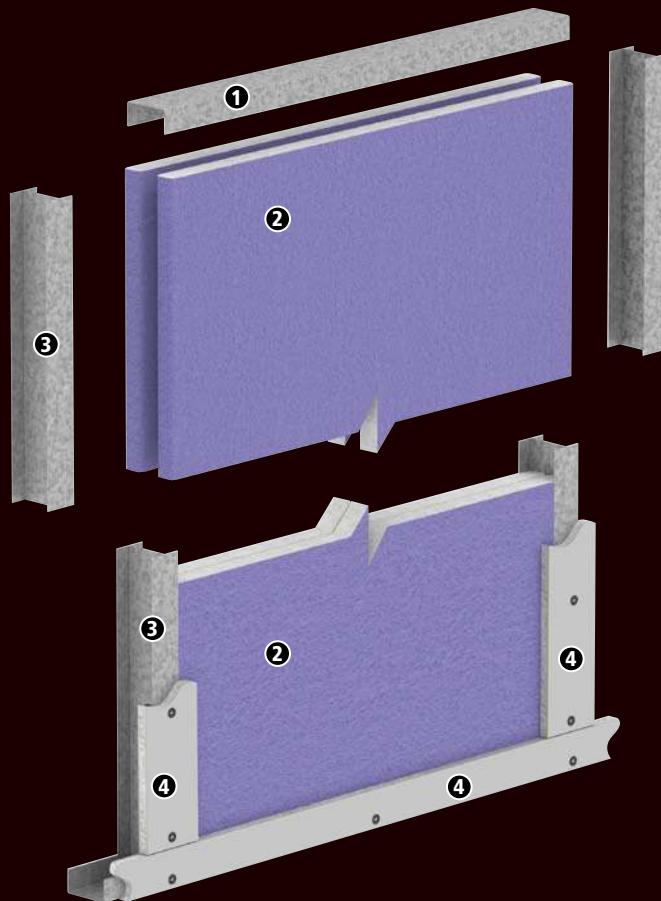
Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 hr.).

### ADVANTAGES

- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Resists the growth of mold per ASTM G21 with a score of 0, the best possible score.
- Dimensionally stable product with negligible expansion and contraction under normal atmospheric conditions.
- Cuts easily for quick installation.
- The gypsum core will not support combustion or transmit temperatures greatly in excess of 212°F (100°C) until completely calcined, a slow process.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

### BASIC COMPONENTS OF AREA SEPARATION WALL

1. 2" C-Track
2. 1" Shaftliner XP®
3. 2" H-Stud
4. 1/2" Fire-Shield® C Gypsum Batten





## TECHNICAL DATA

PHYSICAL PROPERTIES	
	Shaftliner XP
<b>Thickness<sup>1</sup>, Nominal</b>	1" (25.4 mm)
<b>Width<sup>1</sup>, Nominal</b>	2' (610 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	3.75 lbs. / sq. ft. (18.31 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Double Beveled
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 228 lbf. (1,014 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 77 lbf. (343 N)
<b>Humidified Deflection<sup>1</sup></b>	N/A
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 87 lbf. (387 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 11 lbf. (49 N)
<b>Thermal Resistance<sup>5</sup></b>	R = .83
<b>Mold Resistance<sup>6</sup>, ASTM D3273</b>	Score of 10
<b>Mold Resistance<sup>7</sup>, ASTM G21</b>	Score of 0
<b>Product Standard Compliance</b>	ASTM C1396
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	15
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1396 Standard Specification for Gypsum Board	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1396, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM D3273.

7. Tested in accordance with ASTM G21.

## Installation Recommendations

### GENERAL

- Install Shaftliner XP® consistent with methods described in specific application details for National Gypsum Cavity Shaftwall Systems or Area Separation Fire Wall Systems in *NGC Construction Guide*, or with other fire-resistance-rated designs.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or Gypsum Association, GA-600, *Fire Resistance Design Manual*. Maintain adequate ventilation in the working area during installation and curing period.

## Limitations

- Avoid exposure to excessive or continuous moisture.
- Avoid exposure to extreme temperatures. Do not use shaftliner where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Do not use shaftliner in an unlined air supply duct.
- Refer to height limitations in the applicable *NGC Construction Guide* section. See page 351.
- Isolate shaftliner from contact with building structure in locations where structural movement may impose direct loads on shaftliner assemblies.
- Do not immerse Shaftliner XP in water and do not subject to cascading water.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# eXP® Sheathing

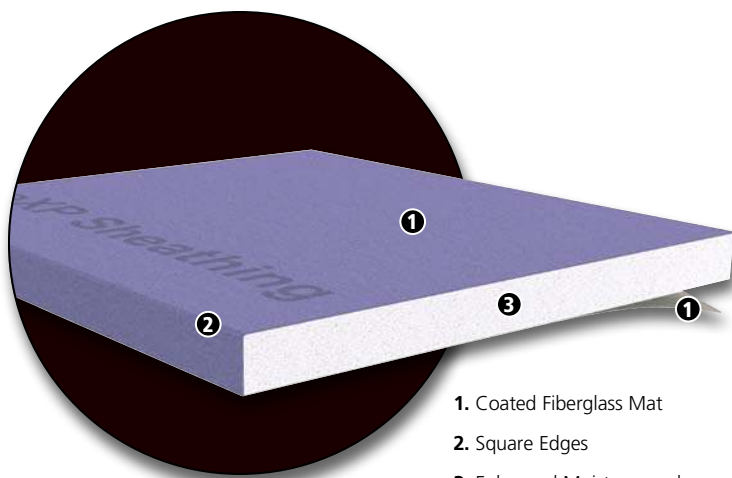
**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND eXP® Sheathing** consists of a moisture- and mold-resistant gypsum core encased in a coated, specially designed PURPLE® fiberglass mat on the face, back and sides. It is available in either a Regular or Type X core. The glass mat is folded around the long edges to reinforce and protect the core, and it provides superior weather resistance.

Use it for attachment to the outside of wall and soffit framing as a substrate for exterior cladding. It is available with either a Regular or Type X core.

For speed of installation, GridMarX® guide marks are printed on the glass mat surface.

**Sizes:** 1/2 in. (12.7 mm) thick Regular and 5/8 in. (15.9 mm) thick eXP® Fire-Shield® Type X Panels are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,438 mm) to 10 ft. (3,048 mm).



1. Coated Fiberglass Mat
2. Square Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® BRAND  
**eXP**®  
Sheathing

eXP® Panels

**National**   
**Gypsum**®

## Basic Uses

### APPLICATIONS

- Use it as a sheathing on wood or steel framing to provide fire resistance and weather protection when used under exterior claddings, such as wood, vinyl and fiber cement siding, masonry veneer, Exterior Insulation and Finish Systems (EIFS) and stucco.
- Use it as a sheathing in fire-resistance-rated exterior wall assemblies and/or for soffit framing.

### ADVANTAGES

- Manufactured to meet ASTM C1177 (Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing).
- Fire-resistant material with a non-combustible gypsum core helps protect framing elements, even when cladding is combustible.
- Does not require taping of joints when used in fire-rated exterior wall assemblies.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Provides superior water resistance without impeding vapor transmission.
- Scores and snaps to exact size without sawing.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Ideally suited for soffit applications and radius applications.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to National Gypsum Company limited warranties for further details.
- Coated fiberglass facers for easy handling.
- Features the GridMarX® guide marks on the panel to allow for faster and accurate installation.

## Installation Recommendations

### GENERAL

Install EXP® Sheathing in accordance with National Gypsum Company written recommendations: GA-253, *Application of Gypsum Sheathing*; ASTM C1280 *Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing*; and other standards referenced in this document.

### FASTENING

**Nails:** Galvanized, 11-gauge, 7/16 in. (11.1 mm) head, 1-1/2 in. (38.1 mm) long for 1/2 in. (12.7 mm) sheathing and 1-3/4 in. (44.5 mm) long for 5/8 in. (15.9 mm) sheathing.

**Screws:** ASTM C1002 or ASTM C954, 1-1/4 in. (31.8 mm) long Type W for wood framing and 1 in. (25.4 mm) long Type S-12 for metal framing.

**Staples:** Galvanized 16-gauge, 7/16 in. (11.1 mm) crown, 1-1/2 in. (38.1 mm) long for 1/2 in. (12.7 mm) sheathing and 1-5/8 in. (41.3 mm) long for 5/8 in. (15.9 mm) sheathing.

Fasteners (nail or screw heads or the crown of staples) should bear tightly against the face of the sheathing panel but should not cut into the facer. Staples should be driven with the crown parallel to the framing. Fasteners should be no less than 3/8 in. (9.5 mm) from the edges and ends of the panel. When shear values are not required, fasteners should be spaced not more than 8 in. (203 mm) o.c. along the vertical ends or edges and intermediate supports.

### SHEATHING

EXP Sheathing may be attached parallel to or perpendicular to wood or metal framing. For horizontal applications, install EXP Sheathing with end joints staggered.

Use appropriate panel orientation for specific fire assemblies and shear wall applications, as required by the design.

Install EXP Sheathing with vertical edges butting over the center of framing members. Fit sheathing snugly around all openings.

Install panels with a 3/8 in. (9.5 mm) gap where non-load-bearing construction abuts structural elements.

To prevent wicking, install panels with a 1/4 in. (6.4 mm) gap where they abut masonry or similar materials that might retain moisture.

## TECHNICAL DATA

PHYSICAL PROPERTIES		
	EXP Sheathing	EXP Sheathing Fire-Shield
<b>Thickness<sup>1</sup>, Nominal</b>	1/2" (12.7 mm)	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 10' (2,438 mm – 3,048 mm)	8' – 10' (2,438 mm – 3,048 mm)
<b>Weight, Nominal</b>	1.9 lbs. / sq. ft. (9.28 k/m <sup>2</sup> )	2.5 lbs. / sq. ft. (12.21 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Square	Square
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 2/8" (6.4 mm)	≤ 1/8" (3.2 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 80 lbf. (356 N)	≥ 90 lbf. (400 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
<b>Bending Radius</b>	6' (1,829 mm)	8' (2,438 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .43	R = .50
<b>Permeance<sup>6</sup></b>	22 perms	19 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 10%	≤ 10%
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Racking Strength<sup>7</sup> (Ultimate – not design value)</b>	> 540 lbs./ft. (732 N/m)	> 654 lbs./ft. (887 N/m)
<b>Mold Resistance<sup>8</sup>, ASTM D3273</b>	Score of 10	Score of 10
<b>Compressive Strength<sup>9</sup></b>	≥ 500 psi	≥ 500 psi
<b>Product Standard Compliance</b>	ASTM C1177	ASTM C1177
<b>Fire-Resistance Characteristics</b>		
<b>Core Type</b>	Regular	Type X
<b>UL Type Designation</b>	N/A	FSW-6
<b>Combustibility<sup>2</sup></b>	Non-combustible Core	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A	Class A
<b>Flame Spread<sup>4</sup></b>	0	0
<b>Smoke Development<sup>3</sup></b>	0	0
<b>Applicable Standards and References</b>		
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products		
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus		
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board		
ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing		
ASTM C1280 Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing		
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber		
ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction		
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials		
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials		
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C		
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>		
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>		
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>		
Gypsum Association, GA-253, <i>Application of Gypsum Sheathing</i>		
National Gypsum Company, <i>NGC Construction Guide</i>		

1. Specified minimum values per ASTM C1177, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM E72.

8. Tested in accordance with ASTM D3273.

9. Tested in accordance with ASTM C473, annex X3.

Locate control joints as required by building design and as recommended by the manufacturer of the specified cladding material.

## VINYL, WOOD AND FIBER CEMENT SIDING

Apply horizontal siding and vertical siding panels directly over EXP® Sheathing covered with weather resistant barrier. Butt siding joints over framing members. Fasteners should have a minimum 1 in. (25.4 mm) penetration into each wood framing member and penetration of each metal framing member recommended by fastener manufacturer.

## STUCCO

Nail or screw 3.4 lb. self-furring galvanized Diamond Mesh metal lath through weather resistant barrier and EXP Sheathing into the framing. Install metal lath immediately after installing EXP Sheathing.

## BRICK VENEER

Wall ties for masonry veneer should be fastened through EXP Sheathing with fasteners that penetrate a minimum of 1 in. (25.4 mm) into wood framing and recommended penetration of cold-formed metal framing. Maintain an air space of minimum 2 in. (50.8 mm) between EXP Sheathing and brick veneer per recommendations of the Brick Institute of America.

## SHEAR WALL APPLICATIONS WITH EXP SHEATHING

For shear walls constructed with 1/2 in. (12.7 mm) and 5/8 in. (15.9 mm) EXP Sheathing, apply sheathing vertically to wood studs 16 in. (406 mm) o.c. with 11-gauge, 1-3/4 in. (44.5 mm) long, galvanized nails 4 in. (102 mm) o.c. at edges and 8 in. (203 mm) o.c. at intermediate studs.

**Corner Bracing:** Where continuous diagonal bracing is required, many building codes allow the use of 48 in. (1,219 mm) wide 5/8 in. (15.9 mm) gypsum sheathing panels applied vertically to be used in place of 1 in. (25.4 mm) x 4 in. (102 mm) wood let-in or metal strap bracing.

**Shear Walls:** Where wind or seismic forces require shear walls to resist these lateral forces, most building codes provide allowable shear values for walls having gypsum sheathing applied vertically to wood framing. Specific values with construction requirements and limitations are contained in the model building code (ICC: International Building Code [IBC] and International Residential Code for One- and Two-Family Dwellings [IRC]). Shear values for all gypsum panels, including gypsum sheathing, are defined in GA-229-08, *Shear Values for Screw Application of Gypsum Board on Walls*.

## SAFETY

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

**Caution:** Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at [purplechoice.info](http://purplechoice.info) before use.

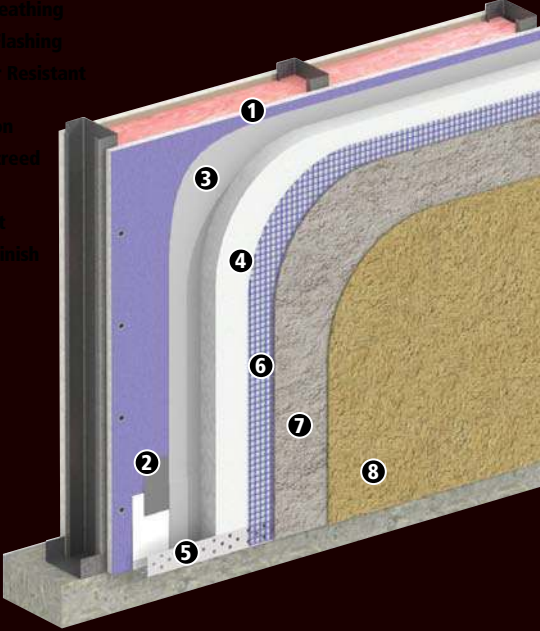
## Limitations

- EXP Sheathing is not a finished surface, nor is it a substrate for the direct application of joint compound, stucco, paint or textures. Placement of vapor retarders within the wall assembly is the responsibility of the design professional.
- Do not use EXP Sheathing as a nailing base. Mechanical fasteners should pass through the sheathing and engage the framing member behind the panel.
- Install materials used in conjunction with EXP Sheathing per the respective manufacturer's recommendations.
- EXP Sheathing is resistant to weather, but it is not intended for immersion in water and should not be subjected to ponding or to cascading water conditions.
- Do not apply EXP Sheathing below grade. Comply with building code grade clearance requirements.

# Common EXP® Sheathing Exterior Applications

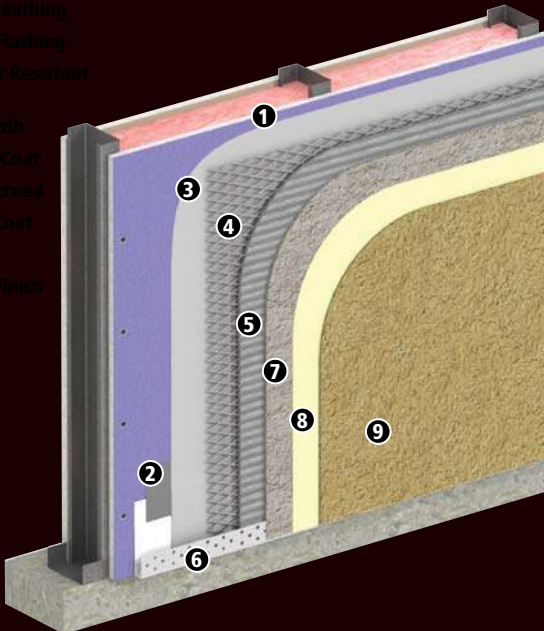
## EIFS

- 1. EXP® Sheathing
- 2. Scribed Flashing
- 3. Weather Resistant Barrier
- 4. Insulation
- 5. Weep Scribed
- 6. Mesh
- 7. Basecoat
- 8. Stucco Finish Coat



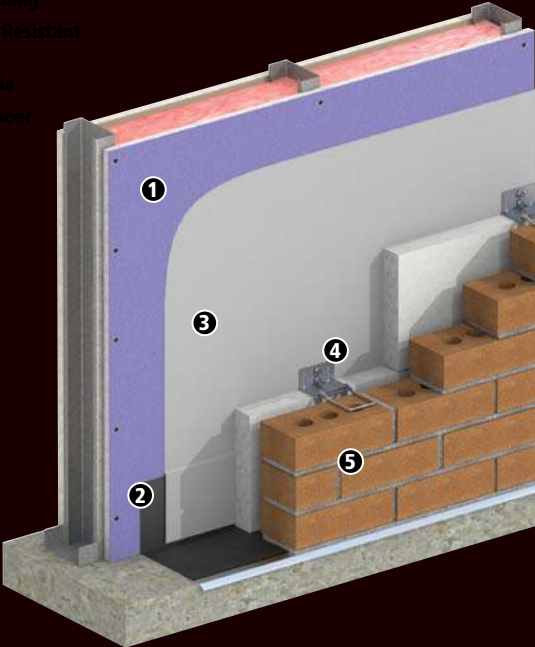
## STUCCO

- 1. EXP® Sheathing
- 2. Scribed Flashing
- 3. Weather Resistant Barrier
- 4. Metal Lath
- 5. Scratch Coat
- 6. Weep Scribed
- 7. Brown Coat
- 8. Primer
- 9. Stucco Finish Coat



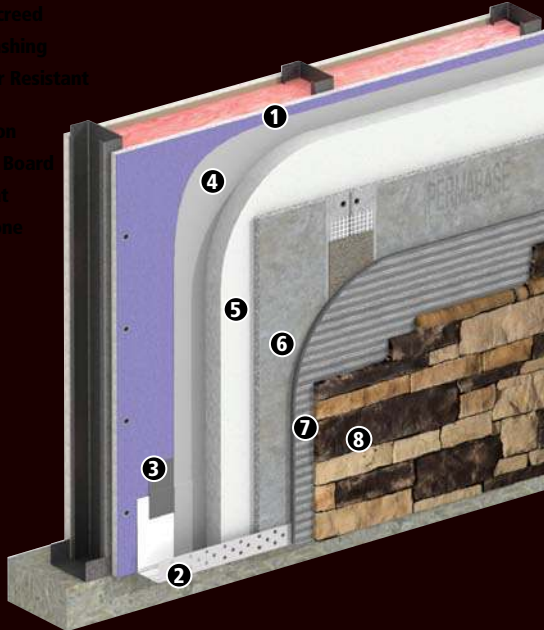
## BRICK VENEER

- 1. EXP® Sheathing
- 2. Base Flashing
- 3. Weather Resistant Barrier
- 4. Veneer Tie
- 5. Brick Veneer



## THIN STONE VENEER

- 1. EXP® Sheathing
- 2. Weep Scribed
- 3. Base Flashing
- 4. Weather Resistant Barrier
- 5. Insulation
- 6. Cement Board
- 7. Basecoat
- 8. Thin Stone Veneer

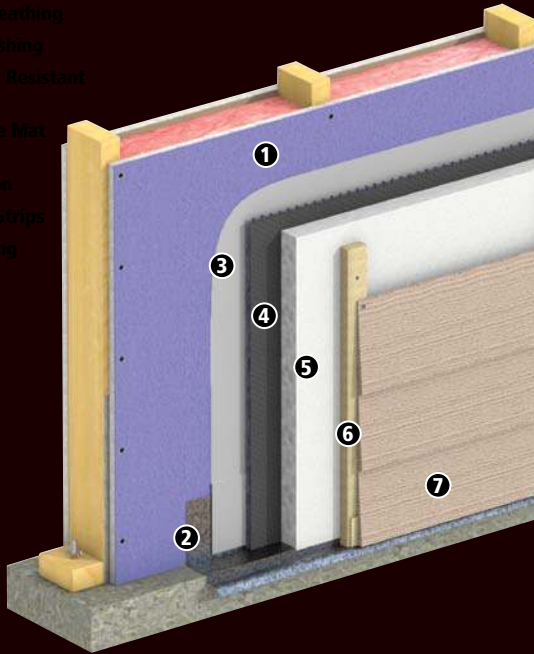


EXP® Panels

## Common EXP® Sheathing Exterior Applications

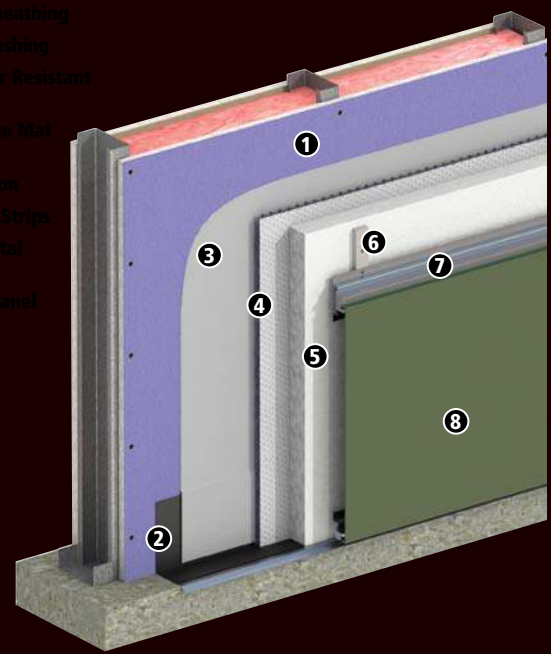
### FIBER CEMENT WOOD STUDS

1. EXP® Sheathing
2. Base Flashing
3. Weather Resistant Barrier
4. Drainage Mat
5. Rigid Insulation
6. Furring Strips
7. Lap Siding



### METAL PANEL

1. EXP® Sheathing
2. Base Flashing
3. Weather Resistant Barrier
4. Drainage Mat
5. Rigid Insulation
6. Furring Strips
7. Horizontal Girts
8. Metal Panel System



- Do not laminate EXP Sheathing directly to masonry surfaces; fasten panels to furring strips or framing.
- EXP Sheathing is not intended for tile applications. For tile applications, Gold Bond® BRAND EXP® Tile Backer or PermaBase® BRAND Cement Board is recommended.
- Gypsum sheathing is not a replacement for specific structurally engineered sheathing in shear wall designs.
- Adhesive-only application of EXP® Sheathing to framing is not recommended.
- Framing supports must not exceed 24 in. (610 mm) o.c.
- Design details, including fasteners, sealants and control joints, must be properly installed per system specifications. Openings and penetrations must be properly flashed and sealed according to code, building design and weather resistant barrier manufacturer's instructions. Failure to do so will void the warranty; refer to EXP Sheathing warranty for terms, conditions and limitations.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).





# EXP® Shaftliner

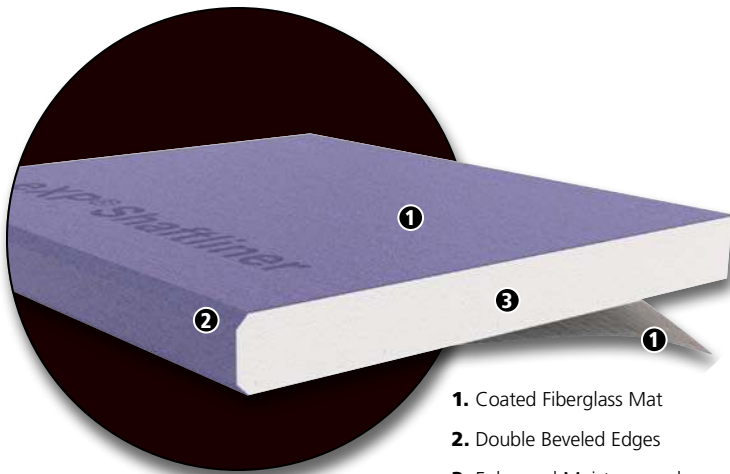
**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND EXP® Shaftliner** consists of a moisture- and mold-resistant gypsum core encased in a coated, specially designed PURPLE® fiberglass mat on the face, back and sides. It is available in a Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it to construct lightweight fire barriers for cavity shaftwalls (1-4 hr.) and area separation fire walls (2 hr.).

For ease of installation, the long edges of EXP® Shaftliner are double beveled.

**Sizes:** 1 in. (25.4 mm) thick panels are available in 2 ft. (610 mm) widths and standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).



1. Coated Fiberglass Mat
2. Double Beveled Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® BRAND  
**EXP**®  
Shaftliner

EXP® Panels

**National**   
**Gypsum**®

## Basic Uses

### APPLICATIONS

Use EXP® Shaftliner to construct lightweight fire barriers for cavity shaftwalls (1–4 hr.) and area separation fire walls (2 hr.).

### ADVANTAGES

- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Provides superior water resistance, without impeding vapor transmission.
- Scores and snaps to exact size without sawing.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to National Gypsum Company limited warranties for further details.
- Fiberglass mat on face and back has special coating for easy handling.

## Installation Recommendations

### GENERAL

- Install EXP Shaftliner consistent with methods described in specific application details for National Gypsum Cavity Shaftwall Systems or Area Separation Fire Wall Systems in *NGC Construction Guide*, or with other fire-resistance-rated designs.

### SAFETY

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

**Caution:** Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at [purplechoice.info](http://purplechoice.info) before use.

### Limitations

- Avoid exposure to excessive or continuous moisture.
- Avoid exposure to extreme temperatures. Do not expose glass mat gypsum panels to temperatures exceeding 125°F (52°C) for extended periods of time.
- Do not use EXP Shaftliner Panels in an unlined air supply duct.
- Refer to height limitations in the applicable *NGC Construction Guide* section. Refer to page 351.
- Isolate gypsum panels from contact with building structure in locations where structural movement may impose direct loads on gypsum panel assemblies.
- EXP Shaftliner is weather resistant, but do not immerse in water and do not subject to cascading water conditions.

## TECHNICAL DATA

PHYSICAL PROPERTIES	
	EXP Shaftliner
<b>Thickness<sup>1</sup>, Nominal</b>	1" (25.4 mm)
<b>Width<sup>1</sup>, Nominal</b>	2' (610 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	3.75 lbs. / sq. ft. (18.31 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Double Beveled
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 230 lbf. (1,023 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 80 lbf. (356 N)
<b>Humidified Deflection<sup>1</sup></b>	N/A
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 80 lbf. (356 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)
<b>Thermal Resistance<sup>5</sup></b>	R = .65
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 5%
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Mold Resistance<sup>6</sup>, ASTM D3273</b>	Score of 10
<b>Product Standard Compliance</b>	ASTM C1658
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW-7
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	0
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1658 Standard Specification for Glass Mat Gypsum Panels	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified minimum values per ASTM C1658, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

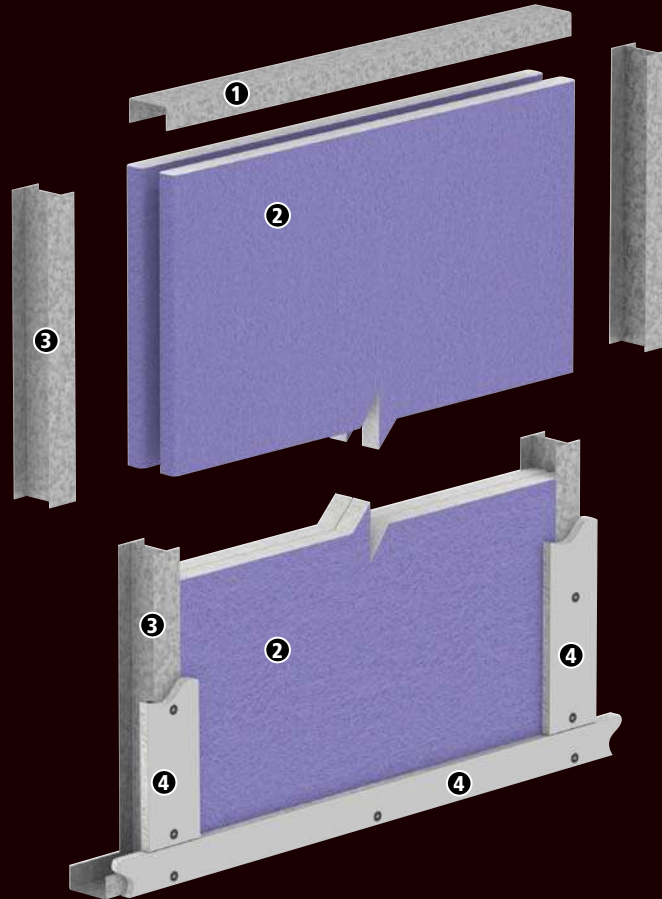
4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM D3273.

## Basic Components of Area Separation Wall

1. 2" H-Stud Track
2. EXP® Shaftliner
3. 2" H-Stud
4. 1/2" Fire-Shield® C Gypsum Batten



### For More Information

#### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

#### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# eXP® Tile Backer

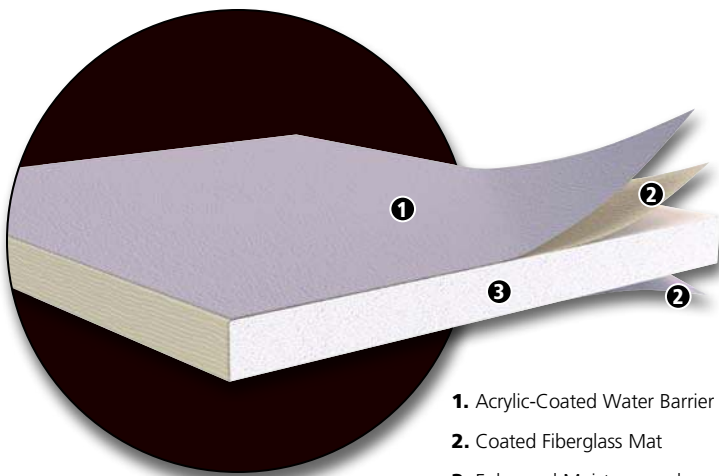
## Regular and Fire-Shield® Type X

**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND eXP® Tile Backer** consists of a moisture- and mold-resistant gypsum core encased in an acrylic-coated, specially designed fiberglass mat on the face, back and sides. It is available in either a Regular or Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it as a substrate for tile applications in high-moisture areas, including showers, bathrooms, indoor swimming pools, laundry rooms and kitchens. It is also a code-compliant substrate for tile and other finishes in both wet and non-wet areas, areas of high humidity and fire-rated assemblies. It is ideally suited for a variety of interior applications.

**Sizes:** 1/2 in. (12.7 mm) and 5/8 in. (15.9 mm) thick panels are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,438 mm).



1. Acrylic-Coated Water Barrier
2. Coated Fiberglass Mat
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® BRAND  
**eXP**®  
Tile Backer

EXP® Panels

National   
Gypsum®

## Basic Uses

### APPLICATIONS

- Use in both wood- and metal-framed construction for interior wall, ceiling and countertop assemblies as a substrate for tile and other finishes. It provides increased mold and moisture resistance in both wet and non-wet areas, areas of high humidity and in fire-rated assemblies.
- The specially formulated 5/8 in. (15.9 mm) Type X core has superior fire-resistive performance when used in specific fire-rated assemblies.

### ADVANTAGES

- Acrylic-coated fiberglass front facer provides an integral water barrier, eliminating the need for a separate water barrier.
- Approved for use in high-moisture environments, such as baths, showers, indoor pools, kitchens and laundry rooms.
- 5/8 in. (15.9 mm) EXP® Tile Backer is an approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- Achieves GREENGUARD Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).

## Installation Recommendations

### GENERAL

- Install EXP Tile Backer in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which tile backer boards are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Do not embed EXP Tile Backer into mortar bed in showers. Install with gray side facing away from the framing, apply tile/finishes to the gray side.
- Score/cut from the gray side using a standard utility knife. Cut outs are made easily with a utility knife or saw. Panel joints must be tight. Fill gaps and inside corners with flexible sealant.
- Drive fasteners flush with the panel surface; do not countersink.
- Hold tile backer boards in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Take care to avoid breaking the facer of the tile backer board. Remove improperly driven nails or screws.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Embed alkali-resistant fiberglass tape with the tile setting material at tile backer board joints prior to tile installation.
- Maintain a room temperature of not less than 40°F (4°C) during application of tile backer boards.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach the tile backer boards and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association, *GA-600, Fire Resistance Design Manual*.
- Avoid installing water-sensitive materials on EXP Tile Backer Panels in pre-rock applications until the building is enclosed.

## TECHNICAL DATA

PHYSICAL PROPERTIES		
	EXP Tile Backer	EXP Fire-Shield Tile Backer
<b>Thickness<sup>1</sup>, Nominal</b>	1/2" (12.7 mm)	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)	4' (1,219 mm)
<b>Length<sup>1</sup>, Standard</b>	8' (2,438 mm)	8' (2,438 mm)
<b>Weight, Nominal</b>	2.0 lbs. / sq. ft. (9.76 k/m <sup>2</sup> )	2.5 lbs. / sq. ft. (12.21 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Square	Square
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 2/8" (6.4 mm)	≤ 1/8" (3.2 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 70 lbf. (311 N)	≥ 90 lbf. (400 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
<b>Bending Radius</b>	12' (3,658 mm)	16' (4,877 mm)
<b>Thermal Resistance<sup>4</sup></b>	R = .43	R = .50
<b>Permeance<sup>5</sup></b>	2 perms	2 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 5%	≤ 5%
<b>Surface Water Absorption<sup>1</sup></b>	≤ .5 grams	≤ .5 grams
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Mold Resistance<sup>6</sup>, ASTM D3273</b>	Score of 10	Score of 10
<b>Mold Resistance<sup>7</sup>, ASTM D6329</b>	Yes	Yes
<b>Product Standard Compliance</b>	ASTM C1178	ASTM C1178
<b>Fire-Resistance Characteristics</b>		
<b>Core Type</b>	Regular	Type X
<b>UL Type Designation</b>	N/A	FSW-6
<b>Combustibility<sup>2</sup></b>	Non-combustible Core	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A	Class A
<b>Flame Spread<sup>3</sup></b>	0	0
<b>Smoke Development<sup>3</sup></b>	0	0
<b>Applicable Standards and References</b>		
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products		
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus		
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board		
ASTM C1178 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing		
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber		
ASTM D6329 Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers		
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials		
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials		
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C		
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>		
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>		
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>		
National Gypsum Company, <i>NGC Construction Guide</i>		

1. Specified minimum values per ASTM C1178, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Tested in accordance with ASTM C518.

5. Tested in accordance with ASTM E96.

6. Tested in accordance with ASTM D3273.

7. Tested in accordance with ASTM D6329.

Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

**CEILINGS**

- Apply tile backer boards first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Bring panel edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the tile backer boards on ceilings. Install the insulation IMMEDIATELY after the panels when using loose fill insulation. Avoid installation practices that might allow condensation to form behind panels.
- When used as a tile substrate for ceilings, apply panels perpendicular to the supports spaced a maximum of 12 in. (305 mm) o.c. for 1/2 in. (12.7 mm) and 16 in. (406 mm) o.c. for 5/8 in. (15.9 mm). Space fasteners 8 in. (203 mm) o.c. along all support members.

**WALLS**

- Locate gypsum panel joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Install tile backer boards either horizontally or vertically to framing using fasteners every 8 in. (203 mm) o.c. When applying tile, use minimum 20-gauge steel or wood framing spaced 16 in. (406 mm) o.c. without blocking, or 24 in. (610 mm) o.c. with blocking at all joints for 1/2 in. (12.7 mm), and spaced 24 in. (610 mm) o.c. for 5/8 in. (15.9 mm).

**COUNTERTOPS**

- Apply EXP® Tile Backer over a minimum 23/32 in. (18.3 mm) exterior-grade plywood sub-base using a bed of thin-set mortar applied with a 1/4 in. (6.4 mm) x 1/4 in. (6.4 mm) notched trowel between the plywood and EXP Tile Backer. Fasten using 1-1/4 in. (31.8 mm) long corrosion-resistant roofing nails or coarse thread bugle-head screws spaced no more than 8 in. (203 mm) o.c. in both directions.

**PENETRATIONS**

- Caulk or seal fixture or plumbing penetrations and abutments to dissimilar materials.

**SAFETY**

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

Caution: Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at [purplechoice.info](http://purplechoice.info) before use.

**Finishing****TILE APPLICATION OVER EXP TILE BACKER**

Tile can be set using either thin-set mortar (ANSI A118.1 or A118.4) or organic adhesive (ANSI A136.1). Embed alkali-resistant fiberglass tape with the tile-setting material prior to tile installation. Install using manufacturer's instructions. Allow tile-setting material to cure for a day prior to grout application.

**NON-TILE APPLICATION OVER EXP TILE BACKER**

Dry Non-Tile Applications: Outside the wet areas of showers and baths, tape joints with gypsum board tape and embed with setting tape joint compound, such as ProForm® BRAND Quick Set™ Setting Compound. Skim the entire surface with a joint compound to create a smooth surface for finishing. Use setting compound or all-purpose ready mix joint compound for skim coat.

**HIGH HUMID AREA APPLICATIONS**

For areas of higher than normal humidity, such as swimming pools and process facilities, finish the walls with materials suitable for humid environments, such as direct-applied finish systems. Caulk all transitions and abutments to dissimilar materials with a flexible caulk. Seal all penetrations, including outlets and switches.



**COUNTERTOP  
INSTALLATION**

- 1. Plywood
- 2. EXP® Tile Backer
- 3. Fiberglass Mesh Tape (Alkali-Resistant) Embedded in Joint Compound
- 4. Latex-Portland Cement Mortar
- 5. Tile and Grout



**SHOWER  
INSTALLATION**

- 1. Support Framing
- 2. Plywood, Min. 1/2"
- 3. Membrane
- 4. EXP® Tile Backer
- 5. Membrane
- 6. Sealant
- 7. Latex-Portland Cement Mortar
- 8. Tile and Grout



EXP® Panels

## Limitations

- For interior use only.
- Always apply tile/finishes to the gray acrylic face.
- Treat joints under tile with alkali-resistant fiberglass mesh tape set in thin-set mortar or tile adhesive.
- Do not use conventional paper gypsum board tape, joint compound, gypsum board nails and gypsum board screws in wet areas.
- Do not use on floor installations.
- Do not use in shower pans or shower curbs.
- Do not use as a base for nailing and mechanical fastening.
- Do not expose to temperatures exceeding 125°F (52°C).
- Avoid continuous exposure to extreme conditions in applications such as saunas, steam rooms and radiant barriers at fireplaces; use PermaBase® BRAND Cement Board for these applications.
- Do not install a vapor barrier directly behind tiled EXP® Tile Backer. Consult your local building code for vapor barrier requirements.
- Do not apply EXP Tile Backer directly to concrete or masonry block.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).

# eXP® Interior Extreme®

## Gypsum Panels

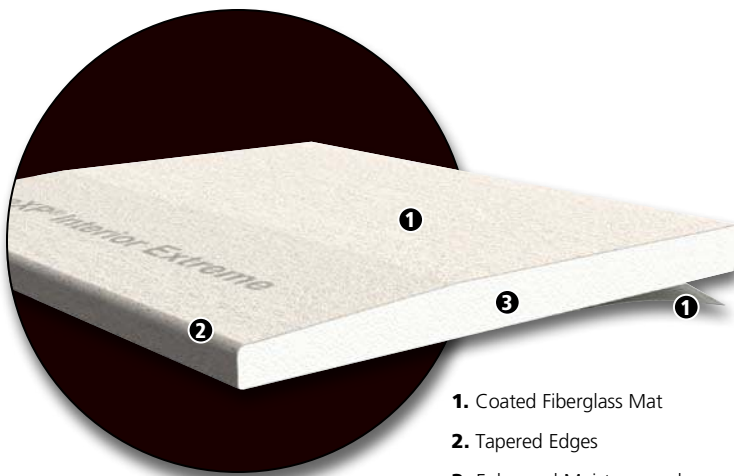
**PURPLE**   
EVOLVE YOUR WALLS™

**Gold Bond® BRAND eXP® Interior Extreme® Gypsum Panels** consist of a moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. It is available in a Regular, Type X or Type C core (often specified where the weight and number of gypsum board layers are a concern). The glass mat is folded around the long edges to reinforce and protect the core.

Use it wherever gypsum board is specified in interior applications for the entire project, wood or metal framing, for increased resistance to incidental moisture.

**Sizes:** 1/2 in. (12.7 mm) thick Regular Panels, 1/2 in. (12.7 mm) thick Type C Panels and 5/8 in. (15.9 mm) thick Type X or Type C Panels are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds.



1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® BRAND  
**eXP**®  
Interior Extreme®

eXP® Panels

**National**   
**Gypsum**®

## Basic Uses

### APPLICATIONS

- Use it in both wood- and metal-framed construction for interior wall and ceiling finishing to provide increased moisture and mold resistance.
- Use it on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely. Also approved for use in protected exterior soffit applications.
- Can use for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

### ADVANTAGES

- Versatile product can be used throughout entire project wherever gypsum board is specified.
- May use for pre-rock applications before building is completely enclosed, which may speed installation.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Scores and snaps easily without sawing.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to National Gypsum Company limited warranties for further details.
- Features the GridMarX® guide marks on the panel to allow for faster and accurate installation.
- 1/2 in. (12.7 mm) Fire-Shield® C, 5/8 in. (15.9 mm) Fire-Shield® Type X or Type C have specially formulated cores that are approved components in specific UL fire-rated designs.
- Achieves GREENGUARD Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).

## Installation Recommendations

### GENERAL

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Panel edges should be brought into contact with each other but not forced into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum panels on ceilings when installing a polyethylene vapor barrier on ceilings behind the gypsum panels. Install the insulation IMMEDIATELY after the gypsum panels when using loose fill insulation. Avoid installation practices that allow condensation to form behind panels.
- Locate gypsum board joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum panels.
- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.

## TECHNICAL DATA

PHYSICAL PROPERTIES				
	EXP Interior Extreme	1/2" EXP Interior Extreme Type C	5/8" EXP Interior Extreme Type X	5/8" EXP Interior Extreme Type C
<b>Thickness<sup>1</sup>, Nominal</b>	1/2" (12.7 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	2.0 lbs. / sq. ft. (9.76 k/m <sup>2</sup> )	2.1 lbs. / sq. ft. (10.25 k/m <sup>2</sup> )	2.5 lbs. / sq. ft. (12.21 k/m <sup>2</sup> )	2.5 lbs. / sq. ft. (12.21 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered	Tapered	Tapered	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)	≥ 140 lbf. (623 N)	≥ 140 lbf. (623 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 80 lbf. (356 N)	≥ 80 lbf. (356 N)	≥ 100 lbf. (445 N)	≥ 100 lbf. (445 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 5/16" (7.9 mm)	≤ 5/16" (7.9 mm)	≤ 4/16" (6.4 mm)	≤ 4/16" (6.4 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 80 lbf. (356 N)	≥ 80 lbf. (356 N)	≥ 90 lbf. (400 N)	≥ 90 lbf. (400 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)	≥ 15 lbf. (67 N)
<b>Bending Radius</b>	6' (1,829 mm)	6' (1,829 mm)	8' (2,438 mm)	8' (2,438 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .43	R = .43	R = .50	R = .50
<b>Permeance<sup>6</sup></b>	22 perms	22 perms	19 perms	19 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 5%	≤ 5%	≤ 5%	≤ 5%
<b>Surface Water Absorption<sup>1</sup></b>	≤ 1.6 grams	≤ 1.6 grams	≤ 1.6 grams	≤ 1.6 grams
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH	6.25 x 10 <sup>-6</sup> in./in./%RH	6.25 x 10 <sup>-6</sup> in./in./%RH	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F	9.26 x 10 <sup>-6</sup> in./in./°F	9.26 x 10 <sup>-6</sup> in./in./°F	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10	Score of 10	Score of 10	Score of 10
<b>Mold Resistance<sup>8</sup>, ASTM D6329</b>	Yes	Yes	Yes	Yes
<b>Product Standard Compliance</b>	ASTM C1658	ASTM C1658	ASTM C1658	ASTM C1658
<b>Fire-Resistance Characteristics</b>				
<b>Core Type</b>	Regular	Type C	Type X	Type C
<b>UL Type Designation</b>	N/A	EXP-C	FSW-6	EXP-C
<b>Combustibility<sup>2</sup></b>	Non-combustible Core	Non-combustible Core	Non-combustible Core	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A	Class A	Class A	Class A
<b>Flame Spread<sup>3</sup></b>	0	0	0	0
<b>Smoke Development<sup>3</sup></b>	0	0	0	0
<b>Applicable Standards and References</b>				
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products				
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus				
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board				
ASTM C1658 Standard Specification for Glass Mat Gypsum Panels				
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber				
ASTM D6329 Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers				
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials				
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials				
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C				
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>				
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>				
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>				
National Gypsum Company, <i>NGC Construction Guide</i>				

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths. Minimum order requirements may apply.

5. Tested in accordance with ASTM C518.

6. Tested in accordance with ASTM E96.

7. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM D6329.

- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600, *Fire-Resistance Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials on EXP® Interior Extreme® Panels in pre-rock applications until the building is enclosed.

## FINISHING

Perform finishing of EXP Interior Extreme Panels in accordance with GA-214. Joints between EXP Interior Extreme Panels may be finished with either paper tape and ready mix joint compound or fiberglass mesh tape and setting compound, such as ProForm® BRAND Interior Finishing Products. In most areas to receive final decoration, skim coating of the entire surface is recommended.

## DECORATION

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## SAFETY

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

**Caution:** Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at: [purplechoice.info](http://purplechoice.info) before use.

## Limitations

- Do not use for exposed exterior applications. EXP Interior Extreme Panels are intended for interior applications or projects.
- Do not use panels as a nailing base as they are nonstructural.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum panels are not recommended where they will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- Do not finish joints until building is properly enclosed.

## CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum panel board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

### EXTERIOR SOFFIT INSTALLATION

- 1. EXP® Interior Extreme® Gypsum Board
- 2. Mesh Tape Set in Compound
- 3. Skim Coat
- 4. EXP® Sheathing



EXP® Panels

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).



# eXP® Interior Extreme® AR

## Gypsum Panels

**PURPLE**   
EVOLVE YOUR WALLS™

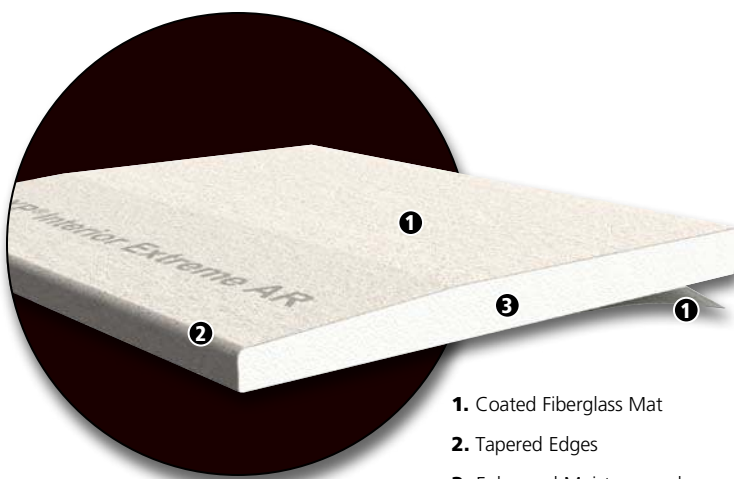
**Gold Bond® BRAND eXP® Interior Extreme® Abuse Resistant (AR) Gypsum Panels** consist of an abuse- and moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. In addition to moisture and mold resistance, the AR Panel has a denser core and an enhanced glass mat for increased resistance to indentation and abrasion. It is available in a Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it for interior applications in areas prone to surface abrasion and indentation, including corridors, entryways, lobby areas and warehouses.

For speed of installation, GridMarX® guide marks are printed on the glass mat surface.

**Sizes:** 5/8 in. (15.9 mm) thick Type X Panels are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,438 mm) to 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds.



1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core

Gold Bond® BRAND  
**eXP**  
Interior Extreme® AR

EXP® Panels

**National**   
**Gypsum**®

**Note:** For abuse and impact test (ASTM C1629) results, see page 388.

## Basic Uses

### APPLICATIONS

- Use it for interior wall and ceiling assemblies in areas where surface abrasion, indentation and moisture, mold and mildew resistance are major concerns.
- Use it on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely.
- Use it for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

### ADVANTAGES

- Provides greater resistance to surface abuse and impact penetration over standard gypsum board.
- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to National Gypsum Company limited warranties for further details.
- Features the GridMarX® preprinted fastening guide on the panel to allow for faster and more accurate installation.
- Achieves GREENGUARD Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).

## Installation Recommendations

### GENERAL

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216. Note that cutting and scoring should be from the back side of the panels.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum panel.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use panels of maximum practical length so that the minimum number of end joints occur. Panel edges should be brought into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum panels on ceilings when installing a vapor retarder behind the gypsum panels. Install the insulation IMMEDIATELY after the gypsum panels when using loose fill insulation. Avoid installation practices that allow condensation to form behind panels.
- Locate gypsum panel joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum panels.

## TECHNICAL DATA

PHYSICAL PROPERTIES	
	EXP Interior Extreme AR
<b>Thickness<sup>1</sup>, Nominal</b>	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	2.8 lbs. / sq. ft. (13.67 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 140 lbf. (623 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 100 lbf. (445 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 4/16" (6.4 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 90 lbf. (400 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)
<b>Bending Radius</b>	8' (2,438 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .50
<b>Permeance<sup>6</sup></b>	19 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 5%
<b>Surface Water Absorption<sup>1</sup></b>	≤ 1.6 grams
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10
<b>Surface Abrasion<sup>8</sup></b>	Level 3
<b>Indentation<sup>8</sup></b>	Level 1
<b>Soft-Body Impact<sup>8</sup></b>	Level 2
<b>Hard-Body Impact<sup>8</sup></b>	Level 1
<b>Product Standard Compliance</b>	ASTM C1658
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW-6
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	0
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1629 Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels	
ASTM C1658 Standard Specification for Glass Mat Gypsum Panels	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths.

5. Minimum order requirements may apply.

6. Tested in accordance with ASTM C518.

7. Tested in accordance with ASTM E96.

8. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact). Refer to page 388.

- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Listed impact ratings apply to walls constructed with EXP® Interior Extreme® AR applied with long edges parallel to and centered over minimum 20-gauge framing members spaced a maximum of 16 in. (406 mm) o.c.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600, *Fire-Resistance Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials adjacent to EXP Interior Extreme Panels in pre-rock applications until the building is enclosed.

### FINISHING

Perform finishing of EXP Interior Extreme AR Gypsum Panels in accordance with GA-214. Joints between EXP Interior Extreme AR Panels may be finished with either paper tape and ready mix joint compound or fiberglass mesh tape and setting compound, such as ProForm® BRAND Interior Finishing Products. In most areas to receive final decoration, skim coating of the entire surface is recommended.

### DECORATION

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

### SAFETY

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

**Caution:** Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at [purplechoice.info](http://purplechoice.info) before use.

### CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

## Limitations

- Do not use for exterior applications. EXP® Interior Extreme® AR Gypsum Panels are intended for interior use only.
- Do not use panels as a nailing base as they are nonstructural.
- Do not finish joints until building is properly enclosed.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum board is not recommended where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312 in. design thickness) steel stud is required.
- Space supporting framing a maximum of 16 in. (406 mm) o.c.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).

# eXP® Interior Extreme® IR

## Gypsum Panels

**PURPLE**   
EVOLVE YOUR WALLS™

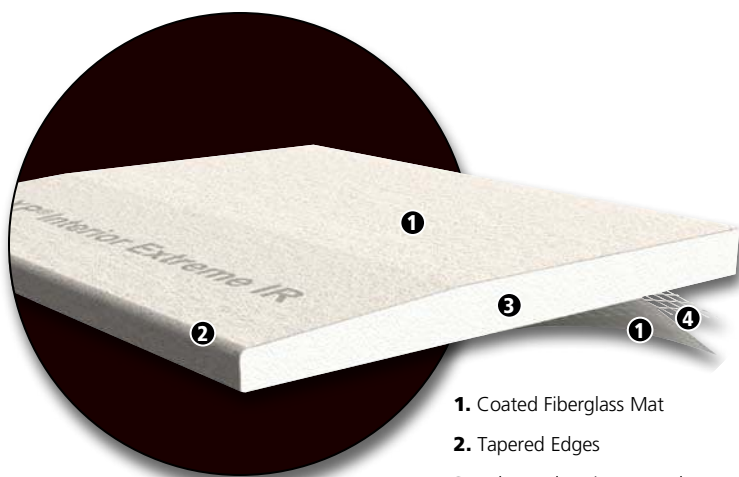
**Gold Bond® BRAND EXP® Interior Extreme® Impact Resistant (IR) Gypsum Panels** consist of an impact- and moisture- and mold-resistant gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. In addition to moisture and mold resistance, the impact-resistant panel has a denser core and an enhanced glass mat for increased resistance to indentation and impact. Additionally, the fiberglass mesh embedded into the core enhances impact resistance. It is available in a Type X core. The glass mat is folded around the long edges to reinforce and protect the core.

Use it for interior applications requiring increased resistance to incidental moisture and wall penetrations. It is ideal for areas prone to cavity penetration, including gymnasiums, correctional facilities, schools and workshops.

For speed of installation, GridMarX® guide marks are printed on the glass mat surface.

**Sizes:** 5/8 in. (15.9 mm) thick Type X Panels are available in 4 ft. (1,219 mm) widths and in standard lengths of 8 ft. (2,348 mm) to 12 ft. (3,658 mm).

**Finishing:** Tapered edges allow joints to be reinforced with ProForm® BRAND Joint Tape and concealed with ProForm® BRAND Ready Mix Joint Compounds or ProForm® BRAND Quick Set™ Setting Compounds.



1. Coated Fiberglass Mat
2. Tapered Edges
3. Enhanced Moisture- and Mold-Resistant Gypsum Core
4. Fiberglass Mesh

Gold Bond® BRAND  
**eXP**  
Interior Extreme® IR

**National**   
**Gypsum**®

**Note:** For abuse and impact test (ASTM C1629) results, see page 388.

## Basic Uses

### APPLICATIONS

- Use in wall assemblies in areas where surface abrasion, impact or penetration and moisture, mold and mildew resistance are major concerns.
- Use on the interior side of exterior walls, mechanical rooms and core walls where moisture exposure is more likely.
- Use for pre-rock applications before the building is completely enclosed, which may shorten construction cycles.

### ADVANTAGES

- Provides greater resistance to abuse and impact penetration over standard gypsum board.
- Approved component in specific UL fire-rated designs.
- Resists the growth of mold per ASTM D3273 with a score of 10, the best possible score.
- Coated fiberglass facers for easy handling.
- Offers a 12-month extended exposure warranty for typical weather conditions. Refer to National Gypsum Company limited warranties for further details.
- Features the GridMarX® preprinted fastening guide on the panel to allow for faster and more accurate installation.
- Achieves GREENGUARD Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).

## Installation Recommendations

### GENERAL

- Install gypsum panels in accordance with methods described in ASTM C840 and GA-216. Note that cutting and scoring should be from the back side of the panels.
- Examine and inspect framing materials to which gypsum panels are to be applied. Remedy all defects prior to installation of the gypsum board.
- Apply gypsum panels first to ceilings at right angles to framing members, then to walls. Use boards of maximum practical length so that the minimum number of end joints occur. Bring panel edges into contact with each other but do not force into place.
- Install batt or blanket ceiling insulation BEFORE the gypsum panels on ceilings when installing a vapor retarder behind the gypsum panels. Install the insulation IMMEDIATELY after the gypsum panels when using loose fill insulation. Avoid installation practices that might allow condensation to form behind panels.
- Locate gypsum panel joints at openings so that no joint will occur within 12 in. (305 mm) of the edges of the opening unless installing control joints at these locations. Stagger vertical end joints. Joints on opposite sides of a partition should not occur on the same stud.
- Hold gypsum panels in firm contact with the framing member while driving fasteners. Fastening should proceed from center portion of the panels toward the edges and ends. Set fasteners with heads slightly below the surface of the panels. Take care to avoid breaking the glass mat facer of the gypsum panel. Remove improperly driven nails or screws.
- Provide minimum 1/4 in. (6.4 mm) clearance between boards and adjacent concrete or masonry to minimize wicking of moisture.
- Maintain a room temperature of not less than 40°F (4°C) during application of gypsum panels.



## TECHNICAL DATA

PHYSICAL PROPERTIES	
	EXP Interior Extreme IR
<b>Thickness<sup>1</sup>, Nominal</b>	5/8" (15.9 mm)
<b>Width<sup>1</sup>, Nominal</b>	4' (1,219 mm)
<b>Length<sup>1,4</sup>, Standard</b>	8' – 12' (2,438 mm – 3,658 mm)
<b>Weight, Nominal</b>	2.8 lbs. / sq. ft. (13.67 k/m <sup>2</sup> )
<b>Edges<sup>1</sup></b>	Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 140 lbf. (623 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 100 lbf. (445 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 4/16" (6.4 mm)
<b>Nail Pull Resistance<sup>1</sup></b>	≥ 90 lbf. (400 N)
<b>Hardness<sup>1</sup> – Core, Edges and Ends</b>	≥ 15 lbf. (67 N)
<b>Bending Radius</b>	8' (2,438 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .50
<b>Permeance<sup>6</sup></b>	19 perms
<b>Water Absorption<sup>1</sup> (% of Weight)</b>	≤ 5%
<b>Surface Water Absorption<sup>1</sup></b>	≤ 1.6 grams
<b>Linear Expansion with Change Moisture</b>	6.25 x 10 <sup>-6</sup> in./in./%RH
<b>Coefficient of Thermal Expansion</b>	9.26 x 10 <sup>-6</sup> in./in./°F
<b>Mold Resistance<sup>7</sup>, ASTM D3273</b>	Score of 10
<b>Surface Abrasion<sup>8</sup></b>	Level 3
<b>Indentation<sup>8</sup></b>	Level 1
<b>Soft-Body Impact<sup>8</sup></b>	Level 3
<b>Hard-Body Impact<sup>8</sup></b>	Level 2
<b>Product Standard Compliance</b>	ASTM C1658
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	Type X
<b>UL Type Designation</b>	FSW-6
<b>Combustibility<sup>2</sup></b>	Non-combustible Core
<b>Surface Burning Characteristics<sup>3</sup></b>	Class A
<b>Flame Spread<sup>3</sup></b>	0
<b>Smoke Development<sup>3</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C840 Standard Specification for Application and Finishing of Gypsum Board	
ASTM C1629 Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels	
ASTM C1658 Standard Specification for Glass Mat Gypsum Panels	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	
Gypsum Association, GA-214, <i>Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels</i>	
Gypsum Association, GA-216, <i>Application and Finishing of Gypsum Panel Products</i>	
Gypsum Association, GA-238, <i>Guidelines for Prevention of Mold Growth on Gypsum Board</i>	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1658, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E136.

3. Tested in accordance with ASTM E84.

4. Please consult your local sales representative for all non-standard lengths and widths.

5. Minimum order requirements may apply.

6. Tested in accordance with ASTM C518.

7. Tested in accordance with ASTM E96.

8. Tested in accordance with ASTM D3273.

8. Tested in accordance with ASTM methods in ASTM C1629 – D4977 (Surface Abrasion), D5420 (Indentation), E695 (Soft-Body Impact), Annex A1 (Hard-Body Impact). Refer to page 388.

- Maintain a room temperature of not less than 50°F (10°C) when using adhesive to attach the gypsum panels and during joint treatment, texturing and decoration, beginning 48 hours prior to application and continuously thereafter until completely dry. Maintain adequate ventilation in the working area during installation and curing period.
- Listed impact ratings apply to walls constructed with EXP® Interior Extreme® IR applied with long edges parallel to and centered over minimum 20-gauge framing members spaced a maximum of 16 in. (406 mm) o.c.
- Install fire-rated assemblies in accordance with the details found in the *UL Fire Resistance Directory* or the Gypsum Association's GA-600, *Fire Resistance Design Manual*.
- Drive fasteners just below the surface, avoiding damage to the core and/or glass mat facer.
- Avoid installing water-sensitive materials adjacent to EXP Interior Extreme Panels in pre-rock applications until the building is enclosed.

### FINISHING

Perform finishing of EXP Interior Extreme IR Panels in accordance with GA-214. Joints between EXP Interior Extreme IR Panels may be finished with either paper tape and ready mix joint compound or fiberglass mesh tape and setting compound, such as ProForm® BRAND Interior Finishing Products. In most areas to receive final decoration, skim coating of the entire surface is recommended.

### DECORATION

Ensure gypsum panel surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of a quality drywall primer to equalize the porosities between surface paper and joint compound, improving fastener and joint concealment.

Selection of a paint to provide desired finish characteristics is the responsibility of the architect or contractor.

Prepare and prime gypsum panels prior to decoration.

Refer to GA-214 to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

### SAFETY

Installers should wear long pants and a long-sleeved, loose fitting shirt. Use protective gloves and special eye protection (goggles or safety glasses with side shield). Wear a dust mask when sanding; you may need additional breathing protection in extremely dusty conditions. Do not use a power saw to cut this product.

**Caution:** Because this product contains fiberglass, dust and glass fibers may be released during normal handling, which could result in eye or skin irritation or cause difficulty in breathing. Whenever possible, avoid contact with the skin and eyes and avoid breathing dust or fibers that may be released during installation. Consult the SDS for this product, available at [purplechoice.info](http://purplechoice.info) before use.

### CRITICAL LIGHTING AREAS

Wall and ceiling areas abutting window mullions or skylights, long hallways, and atriums with large surface areas washed with artificial or natural lighting are a few examples of critical lighting areas. Strong side lighting from windows or surface-mounted light fixtures may reveal minor surface imperfections. Light striking the surface obliquely, at a slight angle, exaggerates surface irregularities. If you cannot avoid critical lighting, minimize the effects by skim coating the gypsum panel surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds, which soften shadows. In general, paints with sheen levels other than flat, enamel paints and dark-toned paint finishes highlight surface defects; consider the use of textures to hide these minor visual imperfections. Finish panels to a Level 5 finish as outlined in GA-214.

## Limitations

- Do not use for exterior applications. EXP® Interior Extreme® IR Panels are intended for interior use only.
- Do not use panels as a nailing base as they are nonstructural.
- Do not finish joints until building is properly enclosed.
- Avoid exposure to excessive or continuous moisture and extreme temperatures. Gypsum board is not recommended where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Avoid using in areas subject to constant and/or excessive moisture and high humidity, such as gang showers, saunas, steam rooms or swimming pool enclosures.
- Avoid using as a backer board directly behind tile in tub and shower areas.
- Do not install in horizontal applications until the building is properly enclosed.
- To maximize impact resistance and eliminate potential screw spin-out, a minimum 20-gauge (.0312 in. design thickness) steel stud is required.
- Space supporting framing a maximum of 16 in. (406 mm) o.c.

## For More Information

### ARCHITECTURAL SPECIFICATIONS

National Gypsum Company's CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [nationalgypsum.com](http://nationalgypsum.com).

### LATEST INFORMATION AND UPDATES

For the latest technical information and updates, call NGC Construction Services: **1-800-NATIONAL (628-4662)** or visit our website: [nationalgypsum.com](http://nationalgypsum.com).

# PermaBase® BRAND Cement Board

## PermaBase PLUS® Cement Board

**PermaBase PLUS® Cement Board** is a lightweight, rigid substrate made of Portland cement, aggregate and fiberglass mesh. It provides an exceptionally hard, durable surface and is able to withstand prolonged exposure to moisture.

Use it for use interior applications and select exterior applications, such as outdoor kitchens, grills and decks.

**Size:** 7/16 in. (11.1 mm) thick cement boards are available in a 36 in. (914 mm) width and in a standard length of 5 ft. (1,524 mm).

### Basic Uses

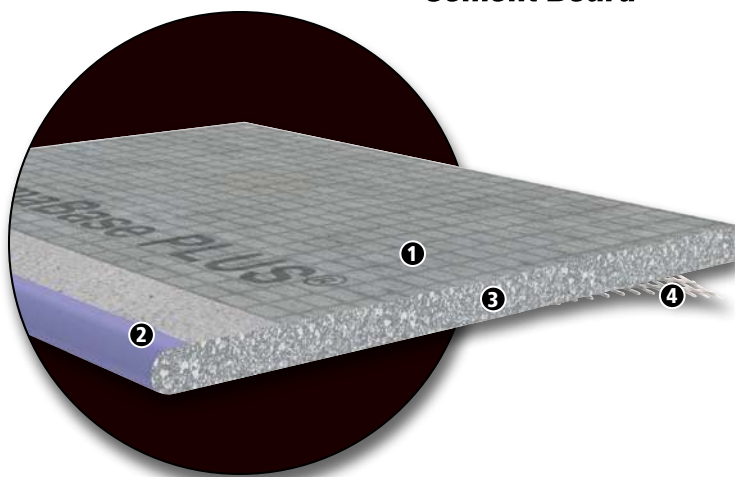
#### APPLICATIONS

PermaBase PLUS® Cement Board is ideally suited as an underlayment or backing surface for tub and shower surrounds, countertops, flooring and a variety of other interior and exterior applications.

#### ADVANTAGES

- Weighs up to 25 percent less than other cement boards on the market.
- IBC/IRC Compliant. Manufactured in accordance with ASTM C1325.
- Easier, cleaner cut using a standard utility knife and straightedge.
- Is impact resistant, extremely durable and dimensionally stable. It has excellent overall flexural, compressive and tensile strength characteristics.

**PermaBASE**  
BRAND  
**PLUS**  
Cement Board



1. Fiberglass Mesh
2. Patented Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

- Use in 1-hour and 2-hour rated assemblies (UL Classified).
- Works for both interior and select exterior applications.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

#### SIZE AND PACKAGING

Thickness, Width and Length	# of Pcs. per Unit
7/16" x 36" x 5' (11.1 mm x 914 mm x 1,524 mm)	60

**PURPLE**   
EVOLVE YOUR WALLS™

## TECHNICAL DATA

PHYSICAL PROPERTIES	
	PermaBase PLUS
<b>Thickness<sup>1</sup>, Nominal</b>	7/16" (11.1 mm)
<b>Weight, Nominal</b>	2.1 lbs. / sq. ft. (10.3 k/m <sup>2</sup> )
<b>Edges</b>	Round
<b>Flexural Strength<sup>8</sup></b>	≥ 750 psi
<b>Fastener Holding<sup>7</sup> (Wet and Dry)</b>	≥ 90 lbs.
<b>Freeze/Thaw Cycles<sup>10</sup></b>	100
<b>Compressive Strength<sup>11</sup></b>	N/A
<b>Wind Load<sup>12</sup> (Studs 16" o.c.)</b>	30 psf
<b>Bending Radius</b>	5' (1,524 mm)
<b>Thermal Resistance<sup>3</sup></b>	R = .28, K = 2.7
<b>Permeance<sup>4</sup></b>	> 10 perms
<b>Water Absorption<sup>9</sup> (% of Weight)</b>	< 10%
<b>Falling Ball Impact<sup>7</sup> (12" drop)</b>	Pass
<b>Linear Expansion with Change Moisture<sup>7</sup></b>	≤ 0.07%
<b>Mold Resistance<sup>5</sup> (ASTM D3273)</b>	Score of 10
<b>Mold Resistant<sup>6</sup> (ASTM G21)</b>	Score of 0
<b>Product Standard Compliance</b>	ASTM C1325
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	N/A
<b>UL Type Designation</b>	PermaBase PLUS
<b>Surface Burning Characteristics<sup>2</sup></b>	Class A
<b>Flame Spread<sup>2</sup></b>	0
<b>Smoke Development<sup>2</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM A118.9 Test Methods and Specification for Cementitious Backer Units	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing	
ASTM C947 Standard Test Method for Flexural Properties of Thin-Section Glass-Fiber-Reinforced Concrete (Using Simple Beam with Third-Point Loading)	
ASTM C1325 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing	
ASTM D1037 Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials	
ASTM D2394 Standard Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring	
ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	
ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference	
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1325, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E84.

3. Tested in accordance with ASTM C518.

4. Tested in accordance with ASTM E96.

5. Tested in accordance with ASTM D3273.

6. Tested in accordance with ASTM G21.

7. Specified values per ASTM C1325, tested in accordance with ASTM D1037.

8. Specified values per ASTM C1325, tested in accordance with ASTM C947.

9. Tested in accordance with ASTM C473, 24-hour immersion.

10. Per ANSI A118.9 procedure B. Tested in accordance with ASTM C666.

11. Tested in accordance with ASTM D2394.

12. Tested in accordance with ASTM E330.

# PermaBase® BRAND Cement Board

## PermaBase UltraBacker® 1/4" Cement Board Underlayment

**PermaBase UltraBacker® 1/4" (6.4 mm) Cement Board Underlayment** is a rigid substrate made of Portland cement, aggregate and glass mesh and mat facer. It provides an exceptionally hard, smooth and durable surface that is able to withstand prolonged exposure to moisture.

Use it as an underlayment for ceramic tile on floors, countertops, tub decks and outdoor kitchen counters.

**Size:** 1/4 in. (6.4 mm) thick cement boards are available in a 36 in. (914 mm) width and in a standard length of 5 ft. (1,524 mm).

### Basic Uses

#### APPLICATIONS

Use UltraBacker® 1/4" Cement Board as an underlayment for ceramic tile on floors, countertops, tub decks and outdoor kitchen counters.

#### ADVANTAGES

- Smooth mesh and mat surface is 30 percent stronger and four times more rigid than competitive 1/4 in. (6.4 mm) cement boards.
- Allows for closer fastener application of nails or screws at the edge without crumbling or spinout – reinforced with patented EdgeTech® Technology.
- Cuts easily with a standard utility knife. No need for specialty or power tools.
- No need to modify adjacent thresholds when abutting to carpet, wood flooring or other common flooring materials, due to 1/4 in. (6.4 mm) thickness.

Perma**BASE**  
BRAND  
**ULTRA  
BACKER**  
Cement Board



1. Fiberglass Mesh/Mat
2. Patented Reinforced Edge
3. Cementitious Core
4. Fiberglass Mesh

- Absorbs less water (< 4 percent) than other backer boards, ensuring more open time and a better tile bond.
- Resists mold and moisture. Will not rot, disintegrate or swell when exposed to moisture.
- Works with all brands of thin-sets and grouts.
- Achieves GREENGUARD and GREENGUARD Gold Certification. GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit: [ul.com/gg](http://ul.com/gg).
- Qualifies as a low-VOC emitting material by meeting California Specification 01350. For more information, visit: <http://www.calrecycle.ca.gov/greenbuilding/specs/section01350/>.

#### SIZE AND PACKAGING

Thickness, Width and Length	# of Pcs. per Unit
1/4" x 36" x 5' (6.4 mm x 914 mm x 1,524 mm)	60

**PURPLE**  
EVOLVE YOUR WALLS™

## TECHNICAL DATA

PHYSICAL PROPERTIES	
PermaBase UltraBacker	
<b>Thickness<sup>1</sup>, Nominal</b>	1/4" (6.4 mm)
<b>Weight, Nominal</b>	2.0 lbs. / sq. ft. (9.8 k/m <sup>2</sup> )
<b>Edges</b>	Round
<b>Flexural Strength<sup>8</sup></b>	≥ 1750 psi
<b>Fastener Holding<sup>7</sup> (Wet and Dry)</b>	≥ 90 lbs.
<b>Freeze/Thaw Cycles<sup>10</sup></b>	100
<b>Compressive Strength<sup>11</sup></b>	N/A
<b>Wind Load<sup>12</sup> (Studs 16" o.c.)</b>	N/A
<b>Bending Radius</b>	N/A
<b>Thermal Resistance<sup>3</sup></b>	R = .2, K = 2.7
<b>Permeance<sup>4</sup></b>	> 10 perms
<b>Water Absorption<sup>9</sup> (% of Weight)</b>	< 8%
<b>Falling Ball Impact<sup>7</sup> (12" drop)</b>	Pass
<b>Linear Expansion with Change Moisture<sup>7</sup></b>	≤ 0.07%
<b>Mold Resistance<sup>5</sup> (ASTM D3273)</b>	Score of 10
<b>Mold Resistant<sup>6</sup> (ASTM G21)</b>	Score of 0
<b>Product Standard Compliance</b>	ASTM C1325
<b>Fire-Resistance Characteristics</b>	
<b>Core Type</b>	N/A
<b>UL Type Designation</b>	N/A
<b>Surface Burning Characteristics<sup>2</sup></b>	Class A
<b>Flame Spread<sup>2</sup></b>	0
<b>Smoke Development<sup>2</sup></b>	0
<b>Applicable Standards and References</b>	
ASTM A118.9 Test Methods and Specification for Cementitious Backer Units	
ASTM C473 Standard Test Methods for Physical Testing of Gypsum Panel Products	
ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	
ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing	
ASTM C947 Standard Test Method for Flexural Properties of Thin-Section Glass-Fiber-Reinforced Concrete (Using Simple Beam with Third-Point Loading)	
ASTM C1325 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing	
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ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials	
ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials	
ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference	
ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	
National Gypsum Company, <i>NGC Construction Guide</i>	

1. Specified values per ASTM C1325, tested in accordance with ASTM C473.

2. Tested in accordance with ASTM E84.

3. Tested in accordance with ASTM C518.

4. Tested in accordance with ASTM E96.

5. Tested in accordance with ASTM D3273.

6. Tested in accordance with ASTM G21.

7. Specified values per ASTM C1325, tested in accordance with ASTM D1037.

8. Specified values per ASTM C1325, tested in accordance with ASTM C947.

9. Tested in accordance with ASTM C473, 24-hour immersion.

10. Per ANSI A118.9 procedure B. Tested in accordance with ASTM C666.

11. Tested in accordance with ASTM D2394.

12. Tested in accordance with ASTM E330.



### ProForm® BRAND XP® Lite with Dust-Tech®



#### APPLICATIONS

Use for finishing joints and cornerbead, spotting fasteners, skimming and textures, and repairing cracks in plaster walls.

#### ADVANTAGES

- Reduces airborne dust by 60% – quick and easy clean-up.
- Reduces shrinkage by up to 33%.
- Resists mold growth – per ASTM G21 score of 0 (best) and ASTM D3273 score of 10 (best).
- Provides superior finish.
- Sands without clogging sanding tool.

TECHNICAL DATA	
<b>Packaging</b>	<b>Pail:</b> 4.5 gal. (17 L) <b>Carton:</b> 3.5 gal. (13.2 L)
<b>Approx. Coverage</b>	123-140 lbs. (9 gal.) / 1,000 sq. ft.

### ProForm® BRAND XP® with Dust-Tech®



#### APPLICATIONS

Use for taping, finishing joints and cornerbead, spotting fasteners, skimming and textures, and repairing cracks in plaster walls.

#### ADVANTAGES

- Reduces airborne dust by 60% – quick and easy clean-up.
- Resists mold growth – per ASTM G21 score of 0 (best) and ASTM D3273 score of 10 (best).
- Applies easily and provides excellent bond.
- Lessens pocking and pinholing.
- Works great for first phases of finishing.

TECHNICAL DATA	
<b>Packaging</b>	<b>Pail:</b> 61.7 lbs. (28 kg) <b>Carton:</b> 50 lb. (22.7 kg)
<b>Approx. Coverage</b>	123-140 lbs. (9 gal.) / 1,000 sq. ft.

# ProForm® BRAND Quick Set™ Setting Compounds

## ProForm® BRAND Quick Set™ Compound



### APPLICATIONS

Use for heavy fills, beads, trims, joint finishing and laminating gypsum panels.

### ADVANTAGES

- Streamlines scheduling – recoat immediately once previous coat sets.
- Allows more open time.
- Provides excellent bond.
- Stays strong/highly durable surface.
- Shrinks less and dries white.
- Allows easy mixing.
- Added protection against mold.

### TECHNICAL DATA

<b>Packaging</b>	<b>Bag:</b> 25 lbs. (11.3 kg)
<b>Approx. Coverage</b>	45-55 lbs. (22-29 kg) / 1,000 sq. ft. (93 m <sup>2</sup> )
<b>Mixing</b>	13-14 pts. (6.2-6.6 L) clean, room temperature, drinkable water per bag.

## ProForm® BRAND Quick Set™ Lite Compound



### APPLICATIONS

Use for heavy fills, beads, trims, joint finishing and laminating gypsum panels.

### ADVANTAGES

- 30% lighter than Quick Set Compound.
- Streamlines scheduling – recoat immediately once previous coat sets.
- Provides excellent bond.
- Stays strong/highly durable surface.
- Shrinks less and dries white.
- Allows easy mixing and sanding.
- Added protection against mold.

### TECHNICAL DATA

<b>Packaging</b>	<b>Bag:</b> 18 lbs. (18.2 kg)
<b>Approx. Coverage</b>	45-55 lbs. (22-29 kg) / 1,000 sq. ft. (93 m <sup>2</sup> )
<b>Mixing</b>	11-12 pts. (5.2-5.5 L) clean, room temperature, drinkable water per bag.