

Gold Bond[®] BRAND
eXP[®] Shaftliner
Cavity Shaftwall Systems



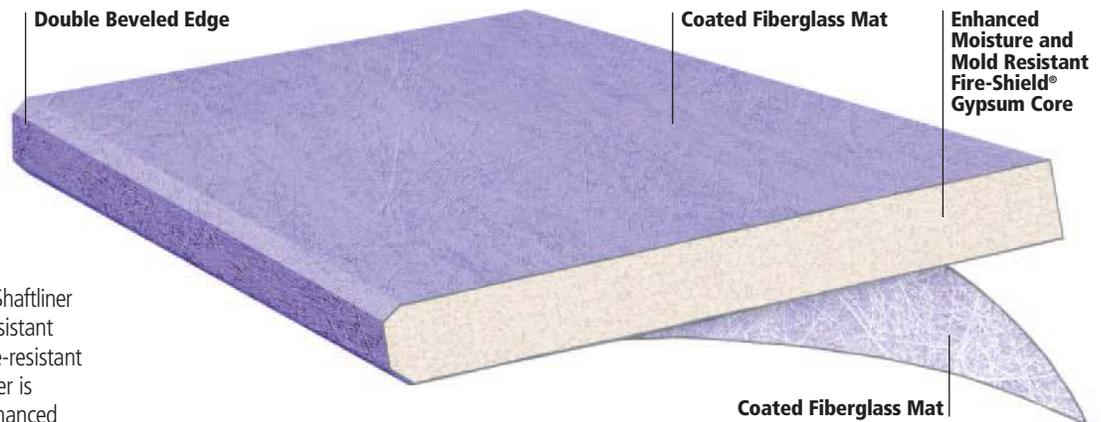
**Gold
Bond[®]**
BRAND
Gypsum Board

National 
Gypsum[®]

Shaftliner

Gold Bond® BRAND

EXP® Extended Exposure Shaftliner



Description

EXP® Extended Exposure Shaftliner is a moisture and mold resistant shaftliner panel with a fire-resistant Type X core. EXP Shaftliner is manufactured with an enhanced moisture and mold resistant core and facer. The purple facer is composed of a coated fiberglass mat which provides superior weather resistant capabilities. EXP Shaftliner is specially coated on the front, back and edges for easy handling. The panel's long edges are double beveled for ease of installation.

Gypsum drywall shaft construction has become the preferred alternative to traditional masonry shafts. 1" EXP Shaftliner is a lightweight, easy-to-install replacement for masonry in the interior core of buildings for shaftwalls, stairwells, other vertical chases and mechanical enclosures. EXP Shaftliner is also used as a component of 2" solid partitions, and area separation fire walls with a layer of 1/2" Regular or Fire-Shield® Gypsum Board attached to each side.

Historically, heavy masonry weighing 20 to 45 lbs. per square foot was used for shaftwall construction. With the use of EXP Shaftliner, shaftwall assemblies weigh a remarkably low 10 to 13 lbs. per square foot.

The benefits of gypsum board shaft systems go far beyond the difference in weight alone. The core wall of a shaft can be installed from the exterior of the shaft and requires no scaffolding. Installation is quick with minimal material waste. EXP

Shaftliner also provides excellent sound control and can achieve the fire ratings necessary for today's building construction. Best of all, gypsum shaftwall systems are more economical than masonry shaft construction.

Cavity Shaftwall Systems are a non-loadbearing drywall partition made up of two basic components, gypsum board and metal framing. Gypsum board includes 1" EXP Shaftliner and 1/2" Fire-Shield C or 5/8" Fire-Shield Gypsum Board face panels. 1/2" XP Fire-Shield C, 5/8" EXP Interior Extreme Fire-Shield or 5/8" XP Fire-Shield Gypsum Board face panels may be utilized for extra protection against mold and mildew. The framing includes I-Studs, C-T Studs or C-H studs with integral tabs/flange which hold the panels in place and J-Track for runners at top and bottom, as well as vertically at partition ends and to frame openings.

Basic Uses

The Cavity Shaftwall Systems were developed to enclose elevator shafts and other vertical chases in buildings where it is advantageous to erect these walls from one side only and where fire resistance and resistance to air pressures are required.

National Gypsum Company Cavity Shaftwall Systems may be constructed with C-T, C-H or I-Stud shaftwall framing.

Features/Benefits

- Manufactured to meet ASTM C 1396 and ASTM C 1658.
- Cavity Shaftwall Systems are very lightweight compared to conventional shaftwalls, weighing approximately 10 lbs. per sq. ft. of wall when finished with a minimum two layers of 1/2" Fire-Shield C Gypsum Board.
- Shafts can be quickly enclosed with shaftwall framing and EXP Shaftliner under most conditions in which installers can work, well below temperature limitations for finish gypsum board applications.
- Will withstand up to 12 months of exposure to typical weather conditions, subject to the terms, conditions and exclusions of National Gypsum's Limited Warranties.
- Treated fiberglass facer and gypsum core provides extra protection against mold growth per ASTM D 3273, achieving a score of 10, the best possible score.
- EXP Shaftliner can be substituted for Gold Bond BRAND Shaftliners in Cavity Shaftwall, Area Separation Fire Wall Systems and solid laminated partitions.
- Superior water resistance which does not impede vapor transmission.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging for a flat and even substrate.
- UL Classified and approved for inclusion in specific UL fire-rated designs.
- Specially coated front, back and edges for easy handling.
- Easily scored and snapped to exact size without sawing.

Limitations

- Cavity shaftwalls are non-loadbearing.
- To prevent weakening due to calcining, EXP Shaftliner panels, like any gypsum wallboard, should not be exposed to temperatures over 125°F (52°C) for extended periods of time.
- Limiting loads and heights not to exceed design specification.
- Not to be used in an unlined air supply duct.
- Should not be exposed to constant dampness or conditions under which free water can be formed.
- EXP Shaftliner is resistant to weather, but is not intended for immersion in water and should not be subjected to cascading water conditions.
- EXP Shaftliner should be protected from the elements and maintained in reasonable condition prior to installation. Boards should be stacked flat, supported off the ground and protected from inclement

weather, with care taken to prevent sagging or damage to edges, ends and surfaces. Following installation, the structure must be adequately maintained by the contractor and/or building owner.

- All design details such as fasteners and sealants, per system specifications, must be properly installed. Failure to do so will void the warranty. (See EXP Shaftliner Warranty for terms, conditions and limitations.)
- Where reference is made to nominal gauges, 25 gauge relates to minimum base steel of .020" and 20 gauge to .0329".

Installation

EXP Shaftliner panels should be handled with care to prevent fracturing or deformation of edges.

Framing and EXP Shaftliner Cavity Shaftwall

1. Locate and lay out partition floor and ceiling lines to ensure plumb partition.
2. Ensure accurate stud spacing to maintain gypsum board face layer module.
3. Position top and bottom J-Track with long leg toward the shaft along ceiling, floor and vertically at column and/or wall where erection of shaftwall will begin. Attach with power driven fasteners 24" o.c. maximum.
4. Frame all openings cut into partitions for ducts, etc., with J-Track to protect cut gypsum core edges and to provide resistance to bending and other stresses.
5. Cut EXP Shaftliner panels 1" less than ceiling height and install first by placing outside vertical edge against long leg of vertical track, plumb and attach with 1-5/8" Type S Screws 24" o.c.

6. Place studs within flanges of floor and ceiling track and rotate into place. Slide stud tabs/flange snugly over edge of shaftliner previously installed.
7. Install next EXP Shaftliner panel between tabs/flange of studs. Continue in this manner until end of partition run. Occasionally check spacing of studs to maintain 24" module.
8. At end of run, cut vertical J-Track at least 2" short of partition height. Cut EXP Shaftliner 3/4" less than remaining width of partition and 2" short of full height. Lay piece of EXP Shaftliner 2" wide and same length as opening in floor track as support for last EXP Shaftliner panel. Fit cut edge of EXP Shaftliner into vertical track and, holding EXP Shaftliner and track together, slide edge of EXP Shaftliner into stud. Align last panel and fasten the vertical track with appropriate fasteners 24" o.c. maximum. Fasten EXP Shaftliner to vertical track with 1-5/8" Type S or S-12 Screws 24" o.c.
9. Locate shaftwall horizontal end joints within the upper and lower third points of wall. Stagger joints in adjacent panels to avoid continuous horizontal joint. EXP Shaftliner horizontal end joints do not require taping, back blocking or framing. When using I-Studs the EXP Shaftliner panels shall be of sufficient length to engage a minimum of two I-Stud tabs along the edge.

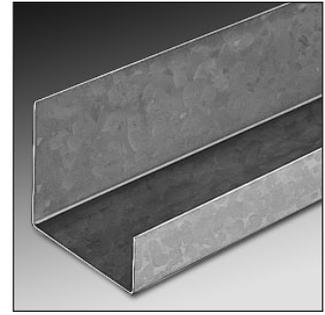
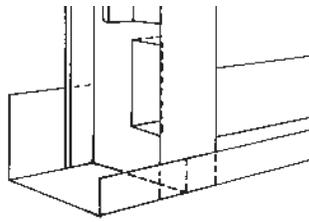
Gypsum Board – 2 Hr. Assembly

Apply first layer of 1/2" Fire-Shield C (5/8" Fire-Shield) Gypsum Board horizontally to face of studs with screws spaced 24" o.c. Apply second layer vertically with screws spaced 12" o.c. (Use 1" Type S Screws on first layer, 1-5/8" Type S Screws on second layer for 25 gauge nominal framing.) (Use 1" Type S-12 Screws on first layer, 1-5/8" Type S-12 Screws on second layer for 20 gauge.)



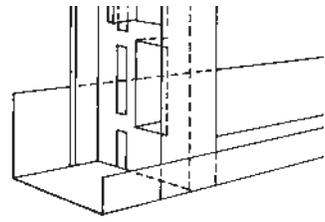
SHAFTWALL STUD

Used with J-Track for framing cavity shaftwalls. Tabs retain 1" shaftliner. Galvanized steel.



J-TRACK 2-1/4" Leg.

Used with shaftwall stud for framing cavity shaftwalls. Galvanized steel.



Stagger all vertical and horizontal joints. For proper joint treatment, maintain uniform room temperature between 50°F and 70°F during cold weather. Treat joints of face layer with tape and joint compound.

Caulking

Caulk Cavity Shaftwall system with acoustical sealant wherever the wall is enclosing shafts where positive or negative air pressure exists. Caulk perimeter of wall and at any other place where voids create the possibility of moving air causing dust accumulation, noise or smoke leakage. Caulking shall be done in compliance with details specified by the architect/designer.

Air Shafts

The System is not designed to serve as an unlined air supply duct. Caulking is recommended at perimeters and penetrations wherever the Cavity Shaftwall System is used to enclose elevators or other shafts where positive or negative pressures will exist. The contractor installing this System shall caulk in compliance with details specified by the architect/designer. Proper caulking will seal perimeters and penetrations to minimize air noises and dust associated with air movement.

Framing for Openings

Frame doors and duct openings with J-Track. Use adequate structural support for openings over 48" wide. For openings up to 48" wide, use vertical J-Track on either side of openings. For head and sill of openings, place J-Track horizontally across openings. Cut J-Track about 12" longer than openings. Then cut flanges and fold back to nest over vertical J-Track and fasten webs or flanges with two 3/8" Type S or 1/2" Type S-12 pan head screws per connection. When nesting J-Track to J-Track, cut off short flange of horizontal J-Track so it will fit over vertical J-Track.

Call Boxes and Position Indicators

Protect call boxes, position indicators and fireman's switches.

Chases

When possible, locate all vertical rise, conduit, stair hangers, etc., within wall cavity. If the cavity in the 2-1/2" stud wall is not of sufficient width, the 4" or 6" studs can be used for chases or erect chase walls.

Door Frames

Elevator door frames must be braced and supported independently of the shaftwall. However, shaftwall must be tied into elevator door frames by being attached to jamb and anchor clips with pan head screws. The 3" leg, nominal 20 gauge J-Track shall be used at the juncture of the elevator door frame and the Cavity Shaftwall System.

Door frames (other than elevator door frames) should be formed from not less than 18 gauge steel, shop primed, with throat openings accurately formed to the nominal wall thickness plus 3/32". Frames must have trim returns not less than 7/16" in width to bear flush against the gypsum board surface. Floor anchor plates should be 14 gauge (min.) steel, firmly welded to frames and designed with not less than two anchor holes 3" o.c. minimum to prevent frame rotation. Anchor plates should be securely fastened to the floor with power driven fasteners having minimum dimensions of 3/16" diameter and 3/4" length. The type and size of fastener is dependent on job conditions, type of concrete or steel framing, etc., and must be sufficient to provide rigid, continuous anchorage to the frames. Jamb anchor clips should be formed from 18 gauge (min.) steel, and welded to jambs to provide adequate anchorage to jamb framing. Elevator door frames must be fastened to and supported by the building structure, separately framed and independent of the partition. They shall be securely anchored to the sills and to the building structure or to the track supports. Anchors or fastenings to suit the wall construction are required and shall be not more than 2' apart.

Specific details can be found at nationalgypsum.com.

Technical Data

Sizes and Types

- Width: 2' (610 mm)
- Lengths:
 - Standard: 8', 10' and 12' (2438 mm, 3048 mm and 3657 mm);
 - Custom: 7' – 14' (2134 mm – 4268 mm)
- Thickness: 1" (25.4 mm)
- Edges: Double beveled

Applicable Standards

- ASTM C 1396/ASTM C 1658
- ASTM D 3273

Composition & Materials

EXP Shaftliner is manufactured with a moisture and mold resistant core and facer. The facer is composed of a coated fiberglass mat which provides superior weather resistant capabilities. EXP Shaftliner has special additives in the fire-resistant Type X gypsum core to enhance its fire-resistive properties.

EXP Shaftliner contains no asbestos.

Fire Resistance Ratings

EXP Shaftliner is UL Classified and approved for inclusion in specific UL fire-rated designs.

Fire resistance ratings represent the results of tests on assemblies made up of materials authorized by National Gypsum in specific configurations. When selecting construction designs to meet certain fire resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the design. Further, precaution should be taken that assembly procedures are in accordance with those of the design assembly. For copies of specific tests, call 1-800-NATIONAL. For fire safety information, see nationalgypsum.com.

UL Core Designation

1" EXP Shaftliner: FSW-7

Handling Precautions

Always store EXP Shaftliner panels flat on a level surface, and support with properly placed ris-

ers. Care should be taken to avoid impact, unwarranted flexing and subsequent damage to board edges, ends and corners.

Appropriate storage and handling is outlined in Gypsum Association GA-801.

Surface Burning Characteristics

- Per ASTM E 84
 - Flame spread: 0
 - Smoke developed: 0
 - Non-combustible per ASTM E 136

Mold and Mildew Resistance

EXP Shaftliner was designed to provide extra protection against mold and mildew compared to standard gypsum board products. No material can be considered "mold-proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling and construction practices, EXP Shaftliner can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during

handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

FUNCTION AND UTILITY

Loading Performance

Although the Cavity Shaftwall Systems are non-loadbearing, this System has been designed and tested to withstand positive and negative air pressure forces exerted by high-speed, high-rise elevators.

Fire Resistance

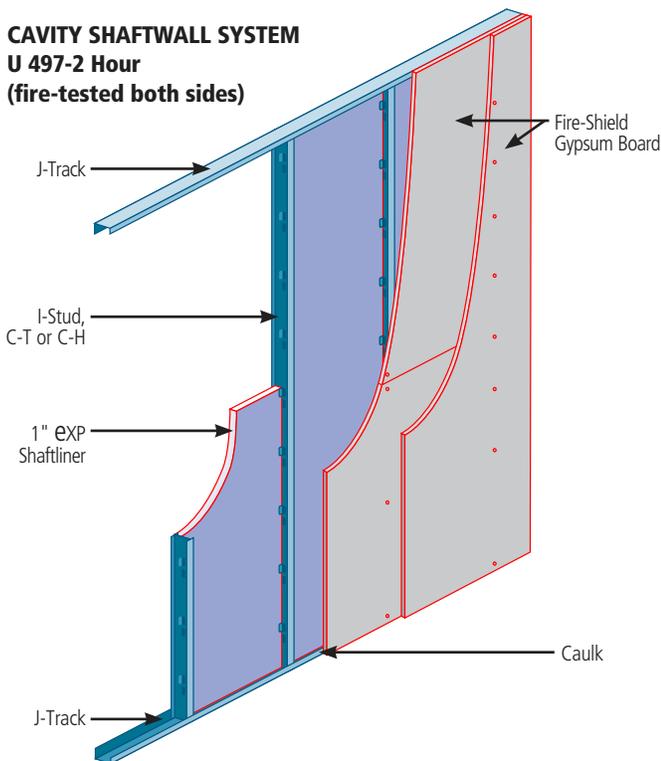
The Cavity Shaftwall Systems have achieved fire resistance ratings of 1, 2 and 4 hours. All components are non-combustible.

25 GA (.020" minimum steel thickness) J-Track exceeded 2,000,000 lateral load oscillation cycles in a test conducted to duplicate the positive and negative pressures created as elevator cabs rise and descend in a shaft.

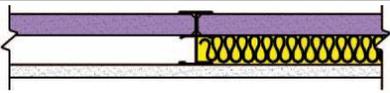
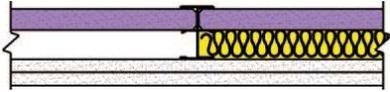
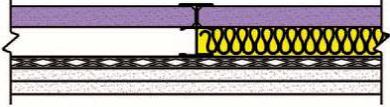
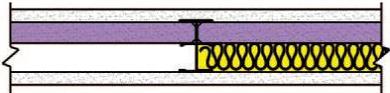
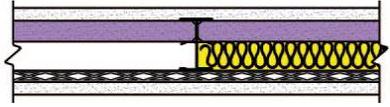
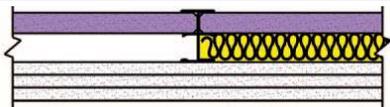
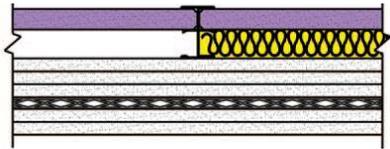
Sound Transmission

STC ratings of 40 to 51 have been achieved in tests conducted in accordance with ASTM E 90.

CAVITY SHAFTWALL SYSTEM U 497-2 Hour (fire-tested both sides)



Fire-Rated Assemblies

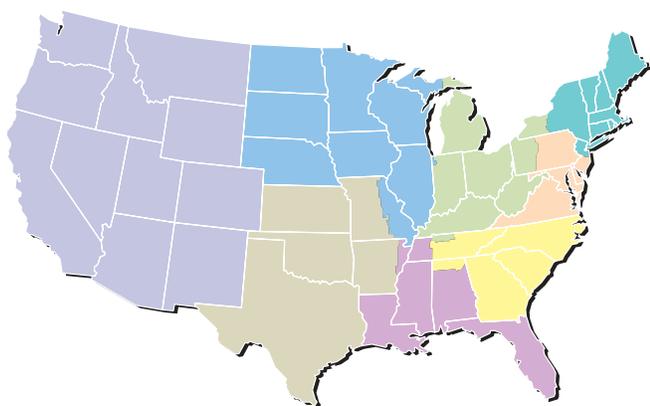
UL LISTED EXP SHAFTLINER SHAFTWALL SYSTEMS					
Fire Rating	UL Design No.		Description	Sound Test No.	STC
1 hr.	U499/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. 5/8" Fire-Shield Gypsum Board* applied horizontally or vertically to studs on side opposite EXP Shaftliner panel.	NGC-2001003	37
			1-1/2" (38.1 mm) mineral wool or glass fiber in cavity.	NGC-2542	43
2 hr.	U497/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. Two layers 5/8" Fire-Shield* or 1/2" Fire-Shield C Gypsum Board applied vertically to studs on side opposite EXP Shaftliner panel. Joints staggered between layers.	NGC-2615	40
			1-1/2" (38.1 mm) mineral wool or glass fiber in cavity.	NGC-2607	48
2 hr.	U497/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. Resilient Furring Channels applied horizontally to studs on side opposite EXP Shaftliner panel spaced maximum 24" o.c. Two layers 5/8" Fire-Shield* or 1/2" Fire-Shield C Gypsum Board applied vertically to channels. Joints staggered between layers. 1-1/2" (38.1 mm) mineral wool or glass fiber in cavity.	BBN NGC-2609	51
			If EXP Interior Extreme IR is used as an alternate to 5/8" Fire-Shield, the system will comply with the requirements of International Building Code, Section 403.2.3, for impact resistance shaft and stair enclosures.		
2 hr.	U498/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. One layer 5/8" Fire-Shield* or 1/2" Fire-Shield C Gypsum Board applied horizontally or vertically to each side.	NGC-2618	40
			1-1/2" (38.1 mm) mineral wool or glass fiber in cavity.	NGC-2534	48
2 hr.	U498/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. One layer 5/8" Fire-Shield* or 1/2" Fire-Shield C Gypsum Board applied horizontally or vertically to same side as EXP Shaftliner. Resilient Furring Channels applied horizontally to studs on opposite side spaced maximum 24" o.c. 5/8" Fire-Shield* or 1/2" Fire-Shield C Gypsum Board applied vertically to resilient furring channels.	NGC-2538	52
			1-1/2" (38.1 mm) mineral wool or glass fiber in cavity.		
3 hr.	W414/W419		1" EXP Shaftliner installed between 2-1/2" steel I-studs, C-H studs, or C-T studs 24" o.c. Three layers 5/8" Fire-Shield or 1/2" Fire-Shield C Gypsum Board applied vertically to studs on side opposite EXP Shaftliner panel. Joints staggered between layers.	N/A	N/A
4 hr.	V451/W419		1" EXP Shaftliner installed between 4" steel I-studs, C-H studs, or C-T studs 24" o.c. Three layers 5/8" Fire-Shield C Gypsum Board applied vertically to studs on side opposite EXP Shaftliner panel. Furring channels applied horizontally over third layer spaced maximum 16" o.c. Fourth layer and fifth layer 5/8" Fire-Shield C applied vertically to furring channels.	N/A	N/A

*All 5/8" EXP products are approved as an alternative to 5/8" Fire-Shield in assemblies above.

UL Listed Assemblies

EXP Extended Exposure Shaftliner is classified as Type X for use in the following UL listings: U347, U428, U429, U497, U498, U499, U505, U525, V433, V451.

CUSTOMER SERVICE SALES AREAS



Atlantic Area

Phone: (800) 237-9167
Fax: (877) 252-0430

Central Area

Phone: (800) 252-1065
Fax: (866) 232-0440

Gulf Area

Phone: (800) 343-4893
Fax: (866) 482-8940

Midwest Area

Phone: (800) 323-1447
Fax: (866) 692-8590

Northeast Area

Phone: (800) 253-3161
Fax: (866) 632-1480

Southeast Area

Phone: (800) 548-9394
Fax: (866) 732-1990

Southwest Area

Phone: (800) 548-9396
Fax: (866) 792-7520

Western Area

Phone: (800) 824-4227
Fax: (800) 438-6266

National Accounts

Phone: (800) 440-1230
Fax: (866) 622-3590

Manufactured Housing

Phone: (800) 455-3185
Fax: (800) 639-1714



For the latest technical and product information, go to: purplechoice.info

Corporate Headquarters

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Technical Information

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(800) 628-4662
Fax: (800) FAX-NGC1
(800) 329-6421

LIMITED WARRANTY

LIMITED WARRANTY

National Gypsum Company ("NGC") warrants to the purchasers of its EXP® Shaftliner, and to the owner at the time of installation of any building on which such product is installed, that subject to the conditions and limitations set forth below:

1. EXP Shaftliner will at the time shipped by NGC be free from defects in material and workmanship that would make it unsuitable for its intended use ("Defects Warranty"); and
2. EXP Shaftliner will not deteriorate or delaminate as a result of exposure to normal weather conditions in areas of use and application for which the product is intended ("Exposure Warranty").

The Defects Warranty will remain in effect until 5 years after the date the product is purchased by the contractor for purposes of installation.

The Exposure Warranty will remain in effect until 12 months after the date of installation of the product.

The warranties provided hereunder may not be transferred or assigned.

WARRANTY CONDITIONS

This warranty applies only if the following conditions are met:

- The installation methods are in accordance with applicable building codes and applicable written recommendations and specifications published by NGC;
- The product has been properly handled and stored at all times according to standard building practices, and has not been abused or used for an improper application;
- The problem with the product is not due to structural movement of the building; movement in, failure of or defects in materials to which the product is attached or which are attached to it; causes other than normal weather conditions, such as near gale or higher force winds, tornadoes, hail storms, hurricanes, floods, earthquakes or falling objects; immersion in water, or sustained pooling or cascading of water; or fire, vandalism, misuse or abuse; and
- The building on which the product is installed is maintained with reasonable care.

EXCLUSIONS AND LIMITATIONS

This warranty does not cover damage or claims to the extent arising from or relating to:

- Other manufacturers' products used with EXP Shaftliner;
- Mold, mildew, algae, fungus or other conditions involving organic growth;
- Installation over structural or framing members that are or which become twisted, bowed or otherwise distorted;

- Damage due to improper installation or building or system design;
- Installations in buildings that have not been maintained with reasonable care; or
- The performance of other materials installed with EXP Shaftliner.

This Limited Warranty is the only warranty applicable to EXP Shaftliner and IS IN LIEU OF AND EXCLUDES, AND NGC DISCLAIMS, ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NGC WILL NOT BE RESPONSIBLE OR LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES, REGARDLESS OF THE NATURE OR THEORY OF THE CLAIM, OR FOR LOSS OF INCOME OR PROFITS, DAMAGE TO ANY STRUCTURE, CONTENTS OR OTHER PROPERTY, OR LOSS OF USE. Some states prohibit the exclusion or limitation of warranties or may not allow the exclusion or limitation of incidental or consequential damages, so the above disclaimers may not apply to you. This warranty gives you specific legal rights and you may also have other rights which will vary depending upon the state.

CLAIMS

All claims under this warranty must be submitted in writing to NGC within thirty (30) days from the time you discover a problem with EXP Shaftliner. Include a brief description of the problem with photographs and copies of sales receipts, invoices or other documents which may show the dates of purchase and installation. Mail this information to:

National Gypsum Company
5901 Carnegie Boulevard
Charlotte, NC 28209
Attn: Director, Quality Services R&D

If NGC determines that the product in question does not comply with this Limited Warranty, NGC will replace the product or, at its option and for product which has been installed, will provide reimbursement to cover costs of repair and replacement up to a maximum of two times the price paid for the product at the time of purchase for installation. Such price must be properly documented by the claimant. THIS REMEDY SHALL BE THE EXCLUSIVE REMEDY FOR ANY CLAIM HEREUNDER AND IS THE TOTAL LIABILITY OF NGC FOR ANY CLAIM OF PROBLEMS OR DEFECTS WITH EXP SHAFTLINER, WHETHER BASED ON THIS LIMITED WARRANTY OR ANY OTHER LEGAL THEORY, INCLUDING BUT NOT LIMITED TO BREACH OF CONTRACT, NEGLIGENCE, OR STRICT LIABILITY.

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