







Product Overview

Georgia-Pacific Gypsum constantly monitors and controls the manufacturing process to ensure gypsum product reliability and consistency. To support this commitment to customer satisfaction, Georgia-Pacific Gypsum offers limited warranties for its gypsum products. See www.gpgypsum.com for warranty details. Products are certified through testing procedures with established designations for:

ASTM Product Standards ASTM Application Standards CSA Standards

Additional testing has been performed on certain products indicated as:

UL Classified	CTC Tested
ULC Classified	TPI Tested
WHI Classified	

Other classifications, designations and testing, which may have been performed on particular products, have been indicated where applicable in this directory.

The information contained in this directory is intended to be informative and accurate. However, it is to be used as a technical guideline and does not replace the judgments and designs of a qualified architect and/or engineer. Georgia-Pacific Gypsum is not responsible for product damage or defects resulting from incorrect application, storage, handling or abuse.

Georgia-Pacific Gypsum Products and LEED®

Our definition at Georgia-Pacific of sustainability is meeting the needs of society today without jeopardizing our ability to do so in the future. The Georgia-Pacific Gypsum manufacturing process is influenced by our concern for the environment, our commitment to the responsible use of natural resources and doing the right thing.

In the coming years, we will continue to focus on:

- Improving energy efficiency at our manufacturing plants, with innovative technologies, that will also result in reduced green house gas emissions.
- Opportunities to reduce water use, to reuse water more effectively.
- Finding cost effective ways to further reduce air emissions.

By using recycled materials for nearly 50 years, we have found innovative ways to recover and reuse materials that otherwise would end up in landfills. We recover and reuse the wallboard that does not meet our standards and are developing beneficial applications for the very small amount of material left over at the end of each production cycle.

Green building codes, programs and standards are establishing themselves all across the country. They all promote the use of products that contribute to both the building science performance of the structure and to minimize the environmental and human health impacts of the products used in construction and over the life of the building or home. Because we are embracing sustainable practices in the manufacture of our products, architects and owners can feel good about the structures they build with our products. It is all a part of being mindful of the environment, and the social and economic impact of our products from start to finish.

Many of our products may contribute to LEED credits. To find out more, please reference the Sustainable Materials Data Sheets (SMDS) at www.gpgypsum.com for recycled content, regional materials, low emitting materials and other potential categories for LEED credit contributions. For general information on sustainability, click the "Sustainability" tab on the website.

Architectural Specifications

Georgia-Pacific Gypsum's 3-part guide specifications are downloadable, as rewritable Microsoft[®] Word documents, in both CSI and ARCOM MasterSpec[®] formats. Please visit www.gpgypsum.com for details. Downloadable specifications are also available online from Building Systems Design, Inc. at www.bsdsoftlink.com, and ARCOM Product Masterspec at http://www.arcomnet.com/users/masterspec_sections_manufacturers.php. Georgia-Pacific Gypsum specifications and 3-D Revit[®] compatible models can also be generated in the Georgia-Pacific Design Studio at www.gpdesignstudio.com.



ToughRock[®] Gypsum Board

The federal and CSA standards, as well as certain ASTM standards, listed have been withdrawn or replaced and are provided for information only.

Product		Dimensions Edge					Standard				
	TH	W	L	TE	S	RE	В	DB	ASTM	FEDERAL	CSA
ToughRock [®] Gypsum Wallboard – For interior walls and ceilings. Accommodates wide range of		4' (1219 mm)	(2438 mm to 3658 mm)	•	•				C 1396 C 36	SS-L-30d	A82.27 M
decorative treatments.		4' (1219 mm)	(2438 mm to 3658 mm)	•						Type III	
	1/2" (12.7 mm)	4' (1219 mm)	8' to 12' (2438 mm to 3658 mm)	•	•	•				Grade R	
ToughRock® Fireguard® Gypsum Board – Noncombustible gypsum core. Interior wall, floor and ceiling applications. Can be used in select fire-rated assemblies. Meets basic Type X requirements.	5/8" (15.9 mm)	4' (1219 mm)	8' to 12' (2438 mm to 3658 mm)	•	•	•	•		C 1396 C 36	SS-L-30d Type III Grade X	A82.27 M
ToughRock[®] Fireguard C[™] Gypsum Board – Use as described above. Appropriate for select commercial applications requiring extended fire resistance. Exceeds basic Type X requirements.	1/2" (12.7 mm) 5/8" (15.9 mm)		(2438 mm to 3658 mm)	٠	•	•	•		C 1396 C 36	SS-L-30d Type III Grade R	A82.27 M
ToughRock[®] Mold-Guard[™] (Mold-Resistant) – For interior walls and ceiling, enhanced mold and moisture protection for high humidity areas, treated paper and moisture-treated core.	1/2" (12.7 mm)	4' (1219 mm)	8' to 12' (2438 mm to 3658 mm)	•					C 1396 C 630	SS-L-30d Type VII Grade W	A82.27 M
ToughRock[®] Mold-Guard[™] Type X Gypsum Board – Use as described above. Can be used in select fire-rated assemblies. Meets basic Type X requirements.	5/8" (15.9 mm)	4' (1219 mm)	8' to 12' (2438 mm to 3658 mm)	•					C 1396 C 630	SS-L-30d Type VII Grade W, X	A82.27 M

ToughRock® Specialty Products

Product		Dimensi	ons		Edge Standar				Standard		
	TH	W	L	TE	S	RE	B	DB	ASTM	FEDERAL	CSA
ToughRock® 54" Wide Gypsum Board – For interior walls and ceilings. Accommodates wide range of decorative treatments. Eliminates filler strip.	1/2" (12.7 mm) 5/8" (15.9 mm)		8' to 12' (2438 mm to 3658 mm)	•					C 1396 C 36	SS-L-30d Type III Grade R	A82.27 M
ToughRock® CD® Ceiling Board – Specially formulated core and paper ceiling board designed for water-based, textured ceiling applications. Sag resistant.	1/2" (12.7 mm)	4' (1219 mm)	12' (3658 mm)	•					C 1396 C 1395	SS-L-30d Type III Grade R	
ToughRock® Fireguard® Soffit Board – Soffit board with treated paper face bonded to specially formulated core designed to resist sag and moisture. For exterior use such as outdoor building soffits, carports and outdoor applications where there is no direct exposure to weather.	1/2" (12.7 mm) 5/8" (15.9 mm)		8', 9', 10' (2438 mm to 3048 mm)	•					C 1396 C 931		A82.27 M
ToughRock® Sound Deadening Board – Use with 1/2" (12.7 mm) ToughRock Fireguard C or 5/8" (15.9 mm) ToughRock Fireguard to meet requirements for sound and fire resistance.	1/4" (6.4 mm)	4' (1219 mm)	8' (2438 mm)	•					C 1396 C 442	SS-L-30d Type IV Grade R	A82.27 M
ToughRock[®] FlexRoc[®] Gypsum Board – High flex gypsum board designed for inside and outside radius curve installations including archways, columns, curved columns, curved partition walls and curved stairways.	1/4" (6.4 mm)	4' (1219 mm)	8′ (2438 mm)	•					C 1396 C 36	SS-L-30d Type III Grade R	A82.27 M
ToughRock® Fireguard® Abuse-Guard® Gypsum Board – Abuse-resistant gypsum board for high traffic areas where surface durability and surface indentation are important. Specifically formulated to offer greater abrasion, rubbing, scraping and gouging resistance than regular paper-faced drywall.	5/8" (15.9 mm)	4′ (1219 mm)	12' (3658 mm)	•					C 1396 C 36	SS-L-30d Type III Grade X	A82.27 M

Note: Some products are not available at all plants or locations. Call sales office listed on back cover for specific product availability.



Veneer Board

The federal and CSA standards, as well as certain ASTM standards, listed have been withdrawn or replaced and are provided for information only.

Product	Dimensions					Edge				Standard			
	ТН	w	L	TE	S	RE	В	DB	ASTM	FEDERAL	CSA		
ToughRock® Veneer Plaster Base (Blue Board) – Gypsum wallboard with high-suction face paper. Use in conjunction with PearlCote [™] Interior Veneer Plaster.	1/2" (12.7 mm)		8′ to 16′ (2438 mm to 4876 mm)	•					C 588	SS-L-30d Type VI Grade R	A82.27 M		
ToughRock [®] Fireguard [®] Veneer Plaster Base – Use as described above. Same fire rating as ToughRock Fireguard gypsum board. UL/ULC Classified. Type X core.	5/8″ (15.9 mm)		8' to 16' (2438 mm to 4876 mm)	•					C 588	SS-L-30d Type VI Grade X	A82.27 M		

Joint Treatment Products

Product	Package Size	Coverage	Standards
			ASTM
ToughRock® All-Purpose Dry Compound – Use for bedding tape, finishing joints, filling corner bead, spotting, skim coating and texturing.	25 lb. (11 kg) bags	25 lbs. (11 kg) per 400 sq. ft. (37 m²) for joints; 15–50 lbs. (7–23 kg) per 1,000 sq. ft. (93 m²) for texturing	C 475
ToughRock® Ready-Mix All-Purpose Joint Compound – Pre-mixed, ready to use for bedding tape, finishing joints, skim coating and texturing.	12 lb. (5.5 kg) pails 61.7 lb. (28 kg) pails 48 lb. (22 kg) carton	61.7 lbs. (28 kg) per 500 sq. ft. (46 m²)	C 475
ToughRock® Lightweight Joint Compound – Pre-mixed, ready to use for finishing joints and cornerbead. Shrinks less and is easier to sand than All Purpose.	4.5-gallon (17 L) cartons & pails 1 gal (4 L) pail	4.5 gallons (17 L) per 500 sq. ft. (46 m²)	C 475
ToughRock [®] Semi-Light Joint Compound – Pre-mixed, ready to use for bedding tape, finishing joints, cornerbead and skim coating.	3.5-gallon (13 L) and 4.5-gallon (17 L) cartons & pails 51 lb. (23 kg) cartons	4.5 gallons (17 L) per 500 sq. ft. (46 m²)	C 475
FoughRock® Ready-Mix Topping Compound – Pre-mixed and ready to use. Finish applications only. Very white in color, easy to sand.	61.7 lb. (28 kg) pail 48 lb. (22 kg) carton	40 lbs. (18 kg) per 500 sq. ft. (46 m ²)	C 475
ToughRock® Setting Compounds – Allows complete taping and finishing in one day. Recommended for cold weather and slow drying conditions. Hardens by setting, not drying. Available 45- and 90-minute. deal products for patch and repair jobs.	33 lb. (15 kg) bags	1,800 sq. ft. (167 m²) per 33 lb. (15 kg) bag	C 475
FoughRock® Sandable Setting Compounds – Same use as ToughRock Setting Compounds. Applies and sands easier than ToughRock Setting Compounds. Available in 20-, 45- and 90-minute.	18 lb. (8 kg) bags 24 lb. (11 kg) bags	1,000 sq. ft. (93 m ²) per 18 lb. (8 kg) bag 1,300 sq. ft. (121 m ²) per 24 lb. (11 kg) bag	C 475
FoughRock® Fire-Halt® Sealant – A noncombustible fast-setting compound for use as a firestop sealant for penetrations such as pipes, conduit and telephone cables in fire-resistive assemblies; and as filler for the flutes in steel decks. Listed with Warnock Hersey International/ ntertek Testing Services.	15 lb. (7 kg) pails 33 lb. (15 kg) bags	1 lb. (0.5 kg) powder mixed will fill 30 cubic inches (.05 m ³)	C 475
ToughRock™ Tape – Special 2-1/16" (52.4 mm) wide paper tape. Reinforces gypsum joints. Pre-creased for ease of application.	75 ft. (22.86 m) rolls 250 ft. (76.2 m) rolls 500 ft. (152.4 m) rolls	400' (122 m) per 1,000 sq. ft. (93 m²) of gypsum board	C 475



Textures and Plaster

The federal and CSA standards, as well as certain ASTM standards, listed have been withdrawn or replaced and are provided for information only.

Product	Package Size	Coverage	Standards ASTM
PearlCote[™] Interior Veneer Plaster – A one-coat plaster application designed for commercial or residential use on walls or ceilings to resist abrasion or damage while maintaining moisture and mold resistance.	50-lb. (22 kg) bag	150 sq. ft. (14 m²) per bag	C 587
ToughRock[™] Regency Ceiling Textures/Polystyrene – For spray application only. A high-quality aggregate finish with superior ceiling coverage. For use with gypsum board or concrete ceilings. Not recommended for high-moisture areas such as bathrooms.	35-lb. (16 kg) bag 40-lb. (18 kg) bag 50-lb. (22 kg) bag	250 sq. ft. (23 m²) per bag 285 sq. ft. (26 m²) per bag 350 sq. ft. (33 m²) per bag	
ToughRock[™] Wall and Ceiling Texture – A decorative spray application for both walls and ceilings. Commonly used for splatter application, knock-down and orange peel type textures.	50-lb. (22 kg) bag	Up to 2,000 sq. ft. (186 m ²) per bag depending on finish	

Note: Some products are not available at all plants or locations. Call sales office listed on back cover for specific product availability.

Gypsum Board Edge Details

Gypsum Board Edge Details



Tapered

The tapered edge was originally called the "recessed edge." This taper allows space for tape and joint treatment to be applied, so the completed job will be flat, smooth and monolithic. Width of taper is about 2" (51mm).



Square

Square edge was the original wallboard edge. Initially designed to be a base with a final covering such as wallpaper, paneling or tile. Now used primarily as sheathing and backer board.



Tapered with Round Edge

Round edge is designed to reduce the beading and ridging problems commonly associated with standard-type gypsum board. This edge formation provides a stronger joint when ToughRock® Setting Compound is used for all joint finishing steps.



Where to use ToughRock® Gypsum Board

Product		Interior Walls									
			Single	e Layer				Double	e Layer		
		Over existing	Masonry	Wood framing	Steel framing	Mas	onry	Wood	framing	Steel f	raming
		walls				Base	Finish	Base	Finish	Base	Finish
ToughRock® Gypsum Wallboard	1/4" (6.4 mm) 3/8" (9.5 mm) 1/2"	X X						X X	Х	Х	
	(12.7 mm)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
ToughRock® Fireguard® Gypsum Board	5/8″ (15.9 mm)	Х	Х	Х	Х	Х	х	Х	Х	Х	Х
ToughRock [®] Fireguard C [™] Gypsum Board	1/2" (12.7 mm) 5/8"	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
	(15.9 mm)	Х	Х	X	Х	Х	X	X	Х	Х	Х
ToughRock [®] Mold-Guard [™] (Mold Resistant)	1/2″ (12.7 mm)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
ToughRock [®] Mold-Guard™ Type X Gypsum Board	5/8" (15.9 mm)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
ToughRock [®] 54″ Wide Gypsum Board	1/2" (12.7 mm)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
	5/8" (15.9 mm)	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
ToughRock [®] CD [®] Ceiling Board	1/2" (12.7 mm)										
ToughRock® Fireguard® Soffit Board	1/2" (12.7 mm) 5/8" (15.9 mm)										
ToughRock [®] Sound Deadening Board	1/4" (6.4 mm)	Х				Х	Х	Х	Х		
ToughRock [®] FlexRoc [®] Gypsum Board	1/4" (6.4 mm)	х						Х		х	Х
ToughRock [®] Fireguard [®] Abuse-Guard [®] Gypsum Board	5/8" (15.9 mm)	х	х	х	х	Х	х	Х	х	Х	х
ToughRock [®] Veneer Plaster Base	1/2" (12.7 mm)	Х	Х	х	Х	Х	х	Х	Х	Х	Х
ToughRock [®] Fireguard [®] Veneer Plaster Base	5/8″ (15.9 mm)	Х	Х	Х	Х	Х	х	х	х	х	Х



Interior of Exterior Walls							Ceilings								
S	ingle Lay	er		Double	e Layei	r	Si	ngle Lay	er		Double	e Layei	r	Acoustic	al Base
Masonry (furred)	Wood or steel framing	Rigid insulation board	Mas (fur Base	onry red) Finish	Wood frar Base	or steel ning Finish	Over existing ceiling	Wood framing	Steel framing	Wo fran Base		fran	eel ning Finish	Over suspended metal grillage	Over channel
				X X		X X	X X	Х		Х	Х	v			v
Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Х	х	х	х	Х	х	х	Х	Х	Х	х	х	х	х	Х	Х
Х	X	X	х	Х	x	х	Х	Х	Х	х	Х	Х	x	х	Х
Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Х	Х	Х	х	Х	x	Х	Х	Х	Х	х	Х	Х	х	Х	Х
Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Х	Х	Х	Х	Х	х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Х	Х		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
							Х	Х	Х	х	Х	Х	Х	Х	Х
								Х	Х	х	Х	Х	х	Х	Х
						Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
			х	Х	х	Х	Х			х		Х			
			Х	Х	Х	Х	Х			х	Х	Х	Х		
Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Х	Х	х	Х	Х	х	х	Х	Х	Х	х	Х	Х	х	Х	Х
Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	Х	Х	Х	х



Toughrock® Gypsum Board Physical Properties

Properties	1/4" ToughRock® Gypsum Board	3/8" ToughRock® Gypsum Board	1/2″ ToughRock® and ToughRock® Mold-Guard™ Gypsum Board
Thickness, nominal inches ³	1/4" (6.4 mm), ± 1/64" (0.4 mm)	3/8" (9.5 mm), ± 1/64" (0.4 mm)	1/2" (12.7 mm), ± 1/64" (0.4 mm)
Width, nominal ³	4' (1220 mm), ± 3/32" (2.4 mm)	4' (1220 mm), ± 3/32" (2.4 mm)	4' (1220 mm), ± 3/32" (2.4 mm)
Length, standard ³	8' (2440 mm) to 12' (3660 mm) ± 1/4" (6.4 mm)	8' (2440 mm) to 12' (3660 mm) ± 1/4" (6.4 mm)	8' (2440 mm) to 16' (4880 mm) ± 1/4" (6.4 mm)
Weight ¹ nominal, lbs./sq. ft. (Kg/m ²)	1.2 (5.0)	1.35 (6.1)	1.65 (7.5)
Edges	Tapered edge	Tapered edge	Tapered, square or tapered with round edges
Surfacing	100% recycled paper face, back and long edges	100% recycled paper face, back and long edges	100% recycled paper face, back and long edges
Flexural Strength ³ , min. Parallel, lbf. (N) Perpendicular, lbf. (N)	20 (89) 50 (222)	30 (133) 80 (356)	40 (178) 110 (489)
R Value ² , ft ² •°F•hr/BTU (m ² •K/W)	.22 est. (0.04)	.33 (0.06)	.45 (0.08)
Nail pull resistance minimum ³ lbf. (N)	≥40 (178)	≥60 (267)	≥80 (356)
Hardness, Ibf. (N) (core, edges, ends)	15	15	15
Humidified Deflection ³ , inches (mm)	Not applicable	15/8" (45 mm)	10/8" (30 mm)
Packaging	Two pieces per bundle, face-to-face and end taped	Two pieces per bundle, face-to-face and end taped	Two pieces per bundle, face-to-face and end taped
Surface Burning Characteristics (per ASTM E 84 or CAN/ULC-S102) Flame Spread Smoke Developed (The core is noncombustible when tested in accordance with ASTM E 136.)	15 0	15 0	15 0

Toughrock® Fireguard® Gypsum Board Physical Properties

Properties	5/8″ ToughRock® Fireguard® and ToughRock® Mold-Guard™ Type X	1/2″ ToughRock® Fireguard C™	5/8″ ToughRock® Fireguard C™
Thickness, nominal inches ³	5/8" (15.9 mm) ± 1/64" (0.4 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Width, nominal ³	4' (1220 mm)	4' (1220 mm)	4' (1220 mm)
Length, standard ³	8' (2440 mm) to 14' (4270 mm)	8' (2440 mm) to 14' (4270 mm)	8' (2440 mm) to 14' (4270 mm)
Weight ¹ nominal, lbs./sq. ft. (Kg/m ²)	2.3 (10.0)	2.0 (9.0)	2.0 (9.0)
Edges	Tapered, Square or Rounded	Tapered, Square or Rounded	Tapered, Square or Rounded
Flexural Strength ³ , min. Parallel, Ibf. (N) Perpendicular, Ibf. (N)	50 (222) 150 (666)	40 (178) 110 (489)	50 (222) 150 (666)
R Value ² , ft ² •°F•hr/BTU (m ² •K/W)	.56 est. (0.10)	.45 (0.08)	.56 (0.10)
Nail pull resistance minimum ³ lbf. (N)	90 (400)	80 (356)	90 (400)
Hardness, lbf. (core, edge and end) (N)	15 (67)	15 (67)	15 (67)
Humidified Deflection ³ , max in. (mm)	5/8" (16)	10/8" (32)	5/8" (16)
Packaging	Two pieces per bundle, face-to-face and end taped	Two pieces per bundle, face-to-face and end taped	Two pieces per bundle, face-to-face and end taped
Surface Burning Characteristics (per ASTM E 84 or CAN/ULC-S102) Flame Spread Smoke Developed (The core is noncombustible when tested in accordance with ASTM E 136.)	15 0	15 0	15 0

¹ Represents approximate weight for design and shipping purposes. For more exacting weight for your area, consult your local representative or call the Georgia-Pacific Gypsum Technical Hotline at 800-225-6119

² Tested in accordance with ASTM C 518.

³ Specified values per ASTM C 1396.

CAUTION: For product fire, safety and use information, go to gp.com/safetyinfo.

8 • For latest information and updates: Technical Service Hotline 1.800.225.6119 or www.gpgypsum.com



Maximum Framing Spacing for Single-Ply Construction¹

Single-Ply	ToughRock Gypsum Board Thickness	Application ²	Maximum Framing Members on Centers Spacing
Ceilings:	3/8" (9.5 mm) ³	perpendicular	16" (406 mm)
	1/2" (12.7 mm)	parallel	16" (406 mm)
	5/8" (15.9 mm)	parallel	16" (406 mm)
	1/2" (12.7 mm)	perpendicular ¹	24" (610 mm)
	5/8" (15.9 mm)	perpendicular	24" (610 mm)
Walls:	3/8" (9.5 mm)	perpendicular	16" (406 mm)
	1/2" (12.7 mm)	perpendicular	24" (610 mm)
	5/8" (15.9 mm)	parallel	24" (610 mm)
Tile Applica		perpendicular	12" (305 mm)
<i>Ceilings:</i>		perpendicular	16" (406 mm)
Walls:	1/2" (12.7 mm)	perpendicular	16" (406 mm)
	5/8" (15.9 mm)	parallel	24" (610 mm)

¹ ToughRock gypsum boards to receive hand- or spray-applied water-based texture material, shall be applied perpendicular.

² Nails for ToughRock gypsum boards applied over existing surfaces shall have a flat head and diamond point, and shall

penetrate not less than 7/8" (22 mm), nor more than 1-1/4" (32 mm) into the framing member.

³ 3/8" (9.5 mm) single-ply gypsum board shall not be applied to ceilings where the gypsum board supports insulation.

Fire-Rating Information

ToughRock[®] Fireguard[®] ToughRock[®] Mold-Guard[™] Type X and ToughRock Fireguard C[™] gypsum board products have been classified by Underwriters Laboratories Inc. (UL) and included in numerous assembly designs investigated by UL for hourly fire resistance ratings. Several ToughRock Fireguard and ToughRock Fireguard C gypsum board products have also been listed by Underwriters Laboratories of Canada (ULC) for inclusion in fire resistance ratings. Each UL or ULC design lists specific manufacturers and products approved for use in the assembly. Products are identified as designated Types that correlate to specific board formulations. The Type designation appears on the UL or ULC label on the product. The following tables provide a quick and easy reference to identify current ToughRock Fireguard gypsum board products and their designations in the UL or ULC directories.

UL Type Designation	Product Name
Туре 5	1/2" (12.7 mm) ToughRock [®] Fireguard C [™] Gypsum Board 5/8" (15.9 mm) ToughRock [®] Fireguard C [™] Gypsum Board
Туре 6	5/8" (15.9 mm) ToughRock [®] Mold-Guard™ Gypsum Board
Туре 9	5/8" (15.9 mm) ToughRock® Fireguard® Gypsum Board 5/8" (15.9 mm) ToughRock® Fireguard® Soffit Board 5/8" (15.9 mm) ToughRock® Fireguard® Veneer Plaster Base 5/8" (15.9 mm) ToughRock® Fireguard® Abuse-Resistant Gypsum Board
UL Type Designation	Product Name
Type Fireguard C	1/2" (12.7 mm) ToughRock [®] Fireguard C [™] Gypsum Board 5/8" (15.9 mm) ToughRock [®] Fireguard C [™] Gypsum Board
Type Pyrosonic	1/4" (6.4 mm) ToughRock® Sound Deadening Gypsum Board
Type GF-2	5/8" (15.9 mm) ToughRock [®] Mold-Guard [™] Gypsum Board
Type GF-6	5/8" (15.9 mm) ToughRock® Fireguard® Gypsum Board

For ToughRock Fireguard gypsum board, UL designation "Type 9" should be used for all UL and cUL assemblies, and ULC designation "Type GF-6" should be used for all ULC assemblies. Please check UL, cUL or ULC certification mark on product for confirmation prior to use. Please note that ToughRock Mold-Guard (UL Type 6 or ULC Type GF-2) may not be approved for listing in certain assemblies. Please check with UL or ULC for current information.

Fire-Rating Information continued

In addition, ToughRock[®] Fireguard,[®] ToughRock[®] Mold-Guard[™] Type X and ToughRock Fireguard C[™] gypsum board products are classified as "Type X" in accordance with ASTM C 1396 and may be used in generic fire-rated assemblies where Type X gypsum board (as defined in ASTM C 12396) is required. Generic systems in the GA-600 Fire Resistance Design Manual are applicable to the products of any manufacturer, including Georgia-Pacific Gypsum, provided they meet certain standards set forth in such manual, such as Type X gypsum board per applicable ASTM standard with specified thickness and size described in the design. "Type X" as used in this technical guide designates gypsum board manufactured and tested in accordance with specific ASTM standards for increased fire resistance beyond regular gypsum board. Please consult the ASTM standard for the specific product (for example, ASTM C 1396 for gypsum board) for further information and significance of use.

It is important that you consult a design professional and the appropriate fire resistance directory or test report for complete assembly information and related information. Georgia-Pacific Gypsum does not provide architectural or engineering services. For additional fire safety information concerning Georgia-Pacific Gypsum's products visit www.gp.com/safetyinfo.

Board Calculator

Determine the wall and ceiling areas:

Width of the room x Length of the room = Ceiling area (Width + Length) x 2 x Height of the room = Wall area

For example, a 12' x 16' x 8' room has a wall/ceiling area of 640 sq. ft. Ceiling area: $12 \times 16 = 192$

Wall area: (12 + 16) x 2 x 8 = 448; 192 + 448 = 640.

Room Measurement Table

	4'	5′	6′	7′	8′	9′	10 ′	117	12 ′	13′	14 ′	15 ′	16 ′
8′	224	248	272	296	320	334	368	392	416	440	464	488	512
9′	244	269	294	319	344	369	394	419	444	469	494	519	544
10′	264	290	316	342	368	394	420	446	472	498	524	550	576
117	284	311	338	365	392	419	446	473	500	527	554	581	608
12′	304	332	360	388	416	444	472	500	528	556	584	612	640
13′	324	353	382	411	440	469	498	527	556	585	614	643	672
14′	344	374	404	434	464	494	524	554	584	614	644	674	704
15 ′	364	395	426	457	488	519	550	581	612	643	674	705	736
16	384	416	448	480	512	544	576	608	640	672	704	736	768



Panel Coverage Table (in sq. ft. of wall area)

	1 Panel	2 Panels	3 Panels	4 Panels	5 Panels	6 Panels
4' x 8' Panel	32	64	96	128	160	192
4' x 9' Panel	36	72	108	144	180	216
4' x 10' Panel	40	80	120	160	200	240
4' x 12' Panel	48	96	144	192	240	288
4' x 14' Panel	56	112	168	224	280	336
4' x 16' Panel	64	128	192	256	320	384

Estimating

Estimating Gypsum Board Nails

Joist/Stud width (on center)	Wallboard Thickness	Gypsum Board Nails	Approx. weight of nails per 1000 sq. ft. of wallboard
16″	1/2″	15/8″	51/4″ lbs.
24″	5/8"	17/8"	51/4" lbs.

Estimating Ready-Mix[™] Joint Compound and Tape

ToughRock® Wallboard Sq. Ft.	Georgia-Pacific Ready-Mix Joint Compound	Estimated Amount of GP Wallboard Tape
100–200 sq. ft.	12 lb. Pail	two 60' rolls
500 sq. ft.	48 lb. Carton	one 250' roll
800 sq. ft.	61.7 lb. Pail	two 250' rolls

Besides standard 4' widths, ToughRock[®] gypsum board is also available in a 54" width that eliminates the need for gap filler boards in horizontal applications when walls are 9' high (see above illustration). Using 54" wide gypsum board when you have 9' ceilings reduces the number of seams you'll need to finish and cuts waste.

CAUTION: For product fire, safety and use information, go to gp.com/safetyinfo.

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Installation

Ceilings

Apply gypsum boards to the ceiling before applying gypsum boards to the walls. Joists must not be spaced more than 24" (610 mm) o.c. For residential applications use 1/2" (12.7 mm) ToughRock[®] CD[®] gypsum panels as a sag resistant alternative to 1/2" (12.7 mm) ToughRock gypsum panels. These panels are formulated to support spray textures paints and are able to support the same amount of insulation weight as 5/8" (15.9 mm) ToughRock[®] Fireguard gypsum boards. Joists spaced 24" (610 mm) should only receive 1/2" (12.7 mm) ToughRock[®] CD[®] gypsum boards or 5/8" (15.9 mm) ToughRock Fireguard gypsum boards. The boards may be applied either parallel or perpendicular to the ceiling framing. The maximum insulation load should not be more than 2.2 lbs/sf (10.7 kg/m2). Space nails 7" (178 mm), screws should be spaced 12" (305 mm) o.c. Please refer to the framing spacing requirements on page 9.

Improper framing construction and alignment can cause problems to telegraph through the boards. Excessive moisture or insulation weight can cause the ceiling boards to sag or cause problems with the joint treatment system.

Walls

Several methods are used to attach gypsum boards to the framing members, depending on the type of framing. Nailing is the conventional attachment method for wood stud walls. Double nailing helps to minimize defects that are a result from loose attachment of the gypsum board. The use of screws helps to minimize loose board problems in wood framing and is required for steel stud framing.

Gypsum wallboard may also be attached by using adhesive. Use a caulking gun to put a 3/8" (10 mm) bead of gypsum board adhesive on the wall studs before installing the board. Then nail the board around the edges, 8" (203 mm) o.c. and along the ends. This improves bond strength and reduces the number of fasteners needed.

Gypsum board may be hung perpendicular or parallel to the framing members. If horizontal, start at the top of the wall and attach the top boards first and work down the wall. Perpendicular orientation is often preferred because it generally reduces the number of joints that need to be finished. Fire-rated partitions may require parallel application. Please refer to the specific rated assembly for details.

Masonry

Although it is permissible to apply gypsum boards directly to masonry walls, it is recommended that the wall be framed with studs or furring strips, either 16" (406 mm) or 24" (610 mm) o.c. The furring strips can either be 1" (25 mm) x 2" (51 mm) or 2' (51 mm) x 2" (51 mm). Furring strips are necessary if the wall is to be insulated. Rigid foam is typically used to insulate the cavity. Gypsum wall boards would then be applied as described in the wall section above.

Corner Bead

Metal or paper corner beads provide strong, durable protection for outside angle corners, uncased openings, beams and soffits. The exposed portion of the bead resists impact and forms a surface to finish. Bead should be installed in one piece. Corner beads, depending on the type, may be nailed, crimped or embedded in place with drywall joint compound.











Finishing Gypsum Board

Joints

The quality of framing and gypsum board application helps determine the finished appearance of drywall. The joints need to be finished to meet the desired visual appearance expectation. Please refer to the Levels of Gypsum Board Finish on page 13. Gypsum Association publication, *GA-214 Recommended Levels of Finish* provides greater detail and explanation. Also, visit www.dwfc.org for further information about joints and finishing gypsum boards.

Bedding

No fasteners should protrude above the surface of the gypsum board. Apply a smooth, full, even coat of Ready-Mix Joint Compound into the recess created by the tapered edges of adjoining boards with a joint finishing knife. Center a strip of wallboard tape over the joint, and press it firmly into the wet bedding compound with a wallboard knife at a 45° angle. Press hard enough to squeeze excess compound out from the edge of the tape, but leave enough compound for a good bond. Pull the wallboard knife back over the tape, drawing the excess compound back over the surface of the tape. The top of the tape should be covered with a thin layer of compound. Let dry about 24 hours.



Taping and Finishing

When the bedding coat is dry, use a 10" (254 mm) joint finishing knife to apply the second

finish coat of Ready-Mix Joint Compound. Feather the edges and let dry about 24 hours. Then apply a final finish coat with a 12" (305 mm) joint finishing knife. Extend this coat 2" (51 mm) wider than the first finish coat. Wait 24 hours, and sand lightly with a medium grit sandpaper. Avoid sanding down to the tape. Care should be taken to avoid sanding or scratching the face paper of the wallboard. Remove joint compound dust prior to decoration.

Fastener Heads

Drive fasteners at least 3/8" (10 mm) from the edge and end of the boards. Fastener should be driven perpendicular to the face of the gypsum board. Seat nails in a shallow dimple left by the hammer head. Do not crush the gypsum core or break the paper. Drywall screws should applied with an electric screw gun and an adjustable screw-depth control head and a Phillips head bit. The screw head should be driven slightly below the face of the gypsum boards. Care should be taken to avoid breaking the face paper. For proper nail and screw spacing requirements, please refer to the Maximum Framing Spacing chart on page 9.

Butt Joints

Butt joints (square cut edge joints) are finished in a similar manner as regular joints. Because butt joints are not tapered, care is needed to not allow the joint compound and tape to build up any more than necessary. To reduce the effect of the build-up, feather the edges of the finish coat to a width twice that of a tapered edge joint.

Outside Corner

Be sure the metal or paper cornerbead is attached firmly. Use a 5" (127 mm) joint finishing knife to spread Ready-Mix Joint Compound about 3" (76 mm) or 4" (102 mm) past the metal or paper corner. Be sure to cover the edges. Let dry 24 hours. Apply second coat with a 10" (254 mm) knife. Feather edges 2" (51 mm) or 3" (76 mm) beyond first coat. Sand lightly when dry. A third coat may be needed.

Inside Corner

Cut a strip of wallboard tape the length of the corner to be finished. Crease the tape down the center. Use a 5" (127 mm) joint finishing knife to spread Ready-Mix Joint Compound about 2" (51 mm) on both sides of the corner. With the knife press the tape into the corner. Use enough pressure to squeeze some compound from the edge of the tape, leaving enough compound to form a good bond. Feather the compound 2" (51 mm) from the edge of the tape. Let dry 24 hours, finishing only one side at a time. Let dry, finish other side of corner. Let dry, then sand. Be careful not to let the compound build up in the corner of the tape. Excess compound in the corner could cause hairline cracks.





Levels of Gypsum Board Finish

Level	Joints	Interior Angles	Accessories	Fasteners	Surface
#0			No taping, finishing c	or accessories required.	
This leve	l of finish may be useful i	in temporary construction	n or whenever the final d	ecoration has not been d	etermined.
#1	Tape set in joint compound.	Tape set in joint compound.			Tool marks and ridges acceptable. Surface free of excess joint compound.
and other degree of for the gy	r areas not normally open f sound and smoke contro	n to public view. Accesso ol is provided; in some ge etails of construction sha	ories optional at specifier eographic areas, this leve all be in accordance with	discretion in corridors a l is referred to as "fire-ta	be concealed, or in building service corridors nd other areas with pedestrian traffic. Some aping." Where a fire-resistance rating is required ssemblies that have met the fire-rating
#2	Tape embedded in joint compound and wiped with a joint knife, leaving a thin coat of compound over tape.	Tape embedded in joint compound and wiped with a joint knife, leaving a thin coat of compound over tape.	Shall be covered by one separate coat of joint compound.	Shall be covered by one separate coat of joint compound.	Surface shall be free of excess joint compound. Tool marks and ridges acceptable. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.
	where gypsum board is the is not of primary conc		le. May also be specified	l in garages, warehouse	storage or other similar areas where surface
#3	Taped as in level #2, then covered with one separate coat of joint compound.	Taped as in level #2, then covered with one separate coat of joint compound.	Shall be covered by two separate coats of joint compound.	Shall be covered by two separate coats of joint compound.	Joint compound shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. See architect's
heavy-gra		be applied as the final d			ied) finishes before wall painting, or where where smooth painted surfaces, or light- to Joint compound shall be smooth and free of tool marks and ridges.
	two separate coats of joint compound.	one separate coat of joint compound.	of joint compound.	of joint compound.	Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. See architect's painting and wallcovering specifications.
textures t sheen lev wallcove	tend to reduce joint photo /el of wallcoverings appl	ographing. Gloss, semi-g ied over this level of fini ght, contains limited patt	loss and enamel paints a sh should be carefully ev ern, has a gloss finish or	re not recommended over aluated. Joints and faste	I lighting areas, flat paints applied over light r this level of finish. The weight, texture and ners must be adequately concealed if the e features is present. Unbacked vinyl
#5	Taped as in level #2, then covered with two separate coats of joint compound.	Taped as in level #2, then covered with one separate coat of joint compound.	Shall be covered by three separate coats of joint compound.	Shall be covered by three separate coats of joint compound.	A thin skin of joint compound, or a material manufactured especially for this purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
					Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. See architect's

Source: GA-214 Recommended Levels of Gypsum Board Finish.



Recommendations and Limitations for Use

The following recommendations and limitations are important to ensure the proper use and benefits of ToughRock[®] gypsum board, ToughRock joint treatment systems and ToughRock textures and plaster. Failure to strictly adhere to such recommendations and limitations may void the limited warranty provided by Georgia-Pacific Gypsum for such product. For additional details, please go to www.gpgypsum.com and select ToughRock gypsum board, ToughRock joint treatment systems or ToughRock textures and plaster for warranty information.

ToughRock Gypsum Board

- 1. Exposure to excessive or continuous moisture and extreme temperatures should be avoided. Gypsum board is not recommended in solar heating systems where board will be in contact with surfaces exceeding 125°F (52°C).
- 2. Must be adequately protected against wetting when used as a base for ceramic wall tile (use DensShield[®] Tile Backer for this purpose.)
- 3. Maximum spacing of framing members: 1/2" (12.7 mm) and 5/8" (15.9 mm) gypsum boards are designed for use on framing centers up to 24" (610 mm); 1/4" (6.4 mm) and 3/8" (9.5 mm) boards on centers up to 16" (406 mm) (but neither is intended for single layer application). In both walls and ceilings when 1/2" (12.7mm) or 5/8" (15.9 mm) gypsum boards are applied across framing on 24" (610 mm) centers and joints reinforced, blocking is not required. Neither 3/8" (9.5 mm) nor 1/4" (6.4 mm) ToughRock Gypsum Boards are recommended for use on steel framing as base for water-based texturing materials. When a water-based texture is used on ceilings with framing 24" (610 mm) o.c., 5/8" (15.9 mm) ToughRock Fireguard gypsum boards, 1/2" ToughRock Fireguard C gypsum boards or 1/2" (12.7 mm) ToughRock® CD® Ceiling Boards should be used to prevent sag.
- 4. The application of gypsum panels over an insulating blanket that has first been installed continuously across the face of the framing members is not recommended. Blankets should be recessed and the blanket flanges attached to sides of studs or joists.
- 5. To prevent objectionable sag in new gypsum board ceilings, the weight of the overlaid unsupported insulation should not exceed 1.3 psf (6.3 kg/m²) for 1/2" (12.7 mm) thick gypsum boards with frame spacing 24" (610 mm) o.c.; 2.2 psf (10.7 kg/m²) for 1/2" (12.7 mm) gypsum boards on 16" (406 mm) o.c. framing or 1/2" (12.7 mm) ToughRock CD Ceiling Boards on 24" (610 mm) framing and 5/8" (15.9 mm) gypsum boards 24" (15.9 mm) o.c.; 3/8" (9.5 mm) thick gypsum boards must not be overlaid with unsupported insulation. A vapor retarder should be installed in exterior ceilings and the plenum or attic space should be properly vented.

During periods of cold or damp weather when an independent vapor retarder is installed on ceilings behind the gypsum board, it is important to install the ceiling insulation before or immediately after installing the ceiling board. Failure to follow this procedure may result in moisture condensation on the back side of the gypsum board, causing the board to sag.

Water-based textures, interior finishing materials and high ambient humidity conditions can produce sag in gypsum ceiling panels if adequate vapor and moisture control is not provided. The following precautions must be observed to minimize sagging of ceiling panels:

- a) Where vapor retarder is required in cold weather conditions, the temperature of the gypsum ceiling panels and vapor retarder must remain above the interior air dew point temperature during and after the installation of panels and finishing materials.
- b) The interior space must be adequately ventilated and air circulation must be provided to remove water vapor from the structure. Most sag problems are caused by the condensation of water within the gypsum panel. The placement of vapor retarders, insulation levels and ventilation requirements will vary by location and climate and should be reviewed by a qualified engineer if in question.
- 6. To produce final intended results, certain recommendations regarding surface preparation, painting products and systems must be adhered to for satisfactory performance.
- 7. Precautions should be taken against creating a double vapor retarder by using gypsum panels as a base for highly water vapor resistant coverings when the wall already contains a vapor retarder. Moreover, do not create a vapor retarder by such wall coverings on the interior side of exterior walls of air-conditioned buildings in hot humid climates where conditions dictate a vapor retarder location near the exterior side of the wall. Such conditions require assessment by a qualified mechanical engineer.

HANDLING AND USE – CAUTION: This product may contain fiberglass which may cause skin irritation. Dust and fibers produced during the handling and installation of the product may cause skin, eye and respiratory tract irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Always maintain adequate ventilation. Use a dust mask or NIOSH/MSHA approved respirator as appropriate in dusty or poorly ventilated areas.

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Joint Treatment

- 8. Georgia-Pacific Gypsum joint compounds should not be intermixed with any other compounds.
- 9. For interior use only—except ToughRock[®] Setting Joint Compound, which may be used for treating joints of DensGlass[®] Sheathing panels in exterior soffit applications.
- 10. Protect bagged and boxed products against wetting; protect ready-mixed products from freezing and extreme heat.
- 11. Each compound coat must be dry before the next is applied—except ToughRock[®] Setting and ToughRock[®] Sandable Setting Compound—and completed joint treatment must be thoroughly dry before decorating.
- 12. Prior to using any epoxy coating over any surface treated with joint compound, consult the epoxy coating manufacturer and follow manufacturer's specific recommendations regarding the preparation or suitability of substrates for the epoxy coating. Many epoxy coatings exert significant shear stress on the substrate as the strong epoxy film shrinks while curing/drying. This stress can cause the bond of the joint compound to fail, resulting in delamination problems.

HANDLING AND USE – **WARNING!** Heat develops as the product hardens (rehydrates) and may cause serious burns resulting in possible permanent injury. After mixing with water, do not allow prolonged contact with skin until the product has completely hardened and cooled.

Mixing or sanding this product after drying may generate dust which can irritate eyes, nose, throat, skin and upper respiratory tract. Use wet sanding to minimize dust generation and always maintain proper ventilation in the work area. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Use a dust mask or NIOSH/MSHA approved respiratory protection during mixing dry materials, while sanding and during clean-up as appropriate. For Material Safety Data Sheet or additional information, call 1-800-225-6119 or go to www.gpgypsum.com.

	High-Performance Gypsum Products from Georgia-Pacific
DensDeck® Roof Boards	Fiberglass mat roof board used as the ideal thermal barrier and cover board to improve resistance to wind uplift, hail, foot traffic, fire and mold in a broad range of commercial roofing applications. Look for DensDeck Prime and DensDeck DuraGuard, too.
DensGlass® Sheathing	The original and universal standard of exterior gypsum sheathing offers superior weather resistance, with a 12-month weather exposure limited warranty. Look for the familiar GOLD color.
DensGlass® Shaftliner	Specially-designed panels for moisture-prone vertical or horizontal shafts, interior stairwells and area separation wall assemblies. 12-month weather exposure limited warranty. GREENGUARD listed for microbial resistance.
DensArmor Plus® High-Performance Interior Panel	High-performance interior panel accelerates scheduling because it can be installed before the building is dried-in. 12-month weather exposure limited warranty. GREENGUARD Indoor Air Quality Certified, [®] GREENGUARD Children & Schools [™] Certified. GREENGUARD listed for microbial resistance. Listed in CHPS [™] High Performance Product Database as a low emitting product.
DensArmor Plus® Abuse-Resistant Interior Panel	Same benefits as DensArmor Plus [®] High-Performance Interior Panel with added resistance to scuffs, abrasions and surface indentations. Ideal for healthcare facilities and schools. GREENGUARD Indoor Air Quality Certified, [®] GREENGUARD Children & Schools [™] Certified. GREENGUARD listed for microbial resistance. Listed in CHPS [™] High Performance Product Database as a low emitting product.
DensArmor Plus® Impact-Resistant Interior Panel	Even greater durability with an embedded impact-resistant mesh for the ultimate resistance in high traffic areas. Ideal for healthcare facilities, schools and correctional institutions. GREENGUARD Indoor Air Quality Certified, [®] GREENGUARD Children & Schools [™] Certified. GREENGUARD listed for microbial resistance. Listed in CHPS [™] High Performance Product Database as a low emitting product.
DensShield® Tile Backer	Acrylic-coated tile backer stops moisture at the surface. Lightweight and strong, built for speed on the job site. Conforms to requirements of IBC/IRC Code. GREENGUARD listed for microbial resistance.
ToughRock® Gypsum Boards	Paper-faced line of gypsum panels for a variety of applications including interior wall and ceiling applications, abuse-resistant boards, veneer plaster base systems, and panels for use in fire-rated assemblies. Listed in CHPS [™] High Performance Product Database as a low emitting product. Use Mold-Guard [™] treated paper gypsum boards for enhanced mold resistance.



Georgia-Pacific

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U.S.A. Midwest: 1-800-876-4746 West: 1-800-824-7503 South: 1-800-327-2344 Northeast: 1-800-947-4497

CANADA Canada Toll Free: 1-800-387-6823 Quebec Toll Free: 1-800-361-0486

TECHNICAL HOTLINE U.S.A. and Canada: 1-800-225-6119



Some of our products have been certified by Scientific Certification Systems (SCS). SCS is an internationally recognized third-party evaluation, testing and certification organization. Its program spans a wide cross-section of the economy, including manufacturing and retailing, consumer products, the energy industry, and the home improvement and construction sectors. For details on specific Georgia-Pacific Gypsum products and plants, please contact our Technical Hotline at 800-225-6119.

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For current warranty information for this product, please go to www.gpgypsum.com and select the product for warranty information. All sales of this product by Georgia-Pacific are subject to our Terms of Sale available at www.gpgypsum.com.

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FIRE SAFETY CAUTION –

Passing a fire test in a controlled laboratory setting and/or certifying or labeling a product as having a one-hour, two-hour, or any other fire resistance or protection rating and, therefore, as acceptable for use in certain fire rated assemblies/systems, does not mean that either a particular assembly/system incorporating the product, or any given piece of the product itself, will necessarily provide one-hour fire resistance, two-hour fire resistance, or any other specified fire resistance or protection in an actual fire. In the event of an actual fire, you should immediately take any and all actions necessary for your safety and the safety of others without regard for any fire rating of any product or assembly/system.

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