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Project: 10258.02 Charlotte Central School Phase II

408 Hinesburg Road  
Charlotte, Vermont 05445

## Submittal #092116-6.1 - Gypsum Wall Board 092116 - Gypsum Board Assemblies

Revision	1	Submittal Manager	Becky St. George (DEW Construction)
Status	Open	Date Created	Jun 16, 2023
Issue Date	Jun 16, 2023	Spec Section	092116 - Gypsum Board Assemblies
Responsible Contractor	Steel Elements International	Received From	Peter Gauthier (Steel Elements International)
Received Date		Submit By	Jun 23, 2023
Final Due Date	Jul 10, 2023	Lead Time	
		Cost Code	
Location		Type	
Approvers	Mike Wanderlich (Dore & Whittier Architects)		
Ball in Court	Luke Keenan (DEW Construction)		
Distribution	Thomas Hengelsberg (Dore & Whittier Architects), Mike Wanderlich (Dore & Whittier Architects), Heather Gratton (Dore & Whittier Architects), Becky St. George (DEW Construction), Dakota Stender (DEW Construction), Scott Speyers (DEW Construction), Kevin Cormier (Steel Elements International), Peter Gauthier (Steel Elements International), Sue Ramsey (Steel Elements International), Chris Giard (Champlain Valley School District)		
Description	Please see the attached revised submittal for your review and approval.  Two manufacturers are being submitted on for GYP BD-6 in case they have trouble acquiring either or to maintain schedule.		

### Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					
Luke Keenan		Jul 3, 2023		Pending	
Mike Wanderlich		Jul 10, 2023		Pending	



CONSTRUCTION SHOP DRAWING / SUBMITTAL REVIEW

Checking is only for conformity to the design concept of the project and compliance with the information given in the contract documents and specifications. Subcontractor is responsible for dimensions, to be confirmed and correlated at the project site, for information that pertains solely to the fabrication, the techniques of construction and for the coordination of their work with all trades.

Project #: 10258.02 – Charlotte Central School Renovations Phase II  
Reviewed By: Luke Keenan

# Gold Bond<sup>®</sup>

## XP<sup>®</sup> Hi-Impact<sup>®</sup> Gypsum Board

**Technical Information**  
800.NATIONAL • 800.628.4662

### DESCRIPTION

Gold Bond<sup>®</sup> XP<sup>®</sup> Hi-Impact<sup>®</sup> Gypsum Board consists of a mold-, mildew-, moisture- and fire-resistant Type X gypsum core with a specially designed PURPLE<sup>®</sup> 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<sup>®</sup> guide marks are printed on the paper surface. XP Hi-Impact Gypsum Board contains no asbestos.

**Finishing:** Perform finishing of XP Hi-Impact Gypsum Board in accordance with GA-214. Joints between XP Hi-Impact Gypsum Board may be finished with either paper tape and ready mix joint compound or fiberglass mesh tape and setting compound.

### 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) XP Hi-Impact 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 water exposure, 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.

- 5/8 in. Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12, the 12 in. o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit [Max12.com](http://Max12.com) for more information.
- Features the GridMarX<sup>®</sup> 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: [calrecycle.ca.gov/greenbuilding/specs/section01350](http://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.
- 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. GridMarX also provides quick identification and uniform nail/screw patterns. 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.

(Continued on page 3)

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Submittal Approvals: (Stamps or Signatures)



# Gold Bond® XP® Hi-Impact® Gypsum Board

## TECHNICAL DATA

Physical Properties		XP Hi-Impact
<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" (16 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
Fire-Resistance Characteristics		
<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
Applicable Standards and References		
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 E119 Standard Test Methods for Fire Tests of Building Construction and 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>		
Gold Bond Building Products, LLC Manufacturer Standards, NGC Construction Guide		

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. Special lengths may be available. Contact your local sales representative for more information.
5. Tested in accordance with ASTM C518.
6. Tested in accordance with ASTM E96.
7. Tested in accordance with ASTM D3273 and rated in accordance with ASTM D3274.
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).



# Gold Bond® XP® Hi-Impact® Gypsum Board

(Continued from page 1)

- 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.
- 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 nailpops. 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. [63.5 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 face of studs or joists in continuous beads. Reference ASTM C840 Section 10.

## Mold and Mildew Resistance

Hi-Impact XP Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent laboratory, XP Hi-Impact Gypsum Board received the highest possible ratings on ASTM G21 and ASTM D3273.

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, XP Hi-Impact Gypsum Board 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.

## Accessories

Drywall screws, joint tape, ready mix joint compound and setting compounds.

## Fire Resistance Ratings

Fire Resistance ratings represent the results of tests on assemblies made up of specific materials in a specific configuration. 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 test. Further, precautions should be taken that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL.

## Finishing

Refer to GA-214, *Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## 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

Ceiling areas abutting 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 ceiling 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. If necessary, finish boards to a Level 5 finish, as outlined in GA-214.



# Gold Bond® XP® Hi-Impact® Gypsum Board

## 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.
- 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 or treat joints until the building is properly enclosed.

## FOR MORE INFORMATION

### Architectural Specifications

Gold Bond Building Products CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [goldbondbuilding.com](http://goldbondbuilding.com).



### Latest Technical Information and Update

Visit [goldbondbuilding.com](http://goldbondbuilding.com) or call National Gypsum Company Construction Services: 1-800-NATIONAL (628-4662).

**Technical Information** *Información Técnica*

**1-800-NATIONAL®**  
1-800-628-4662

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The Gold Bond family of products is manufactured by Gold Bond Building Products, LLC.

**National** **Gypsum**®

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**Gold Bond®**  
**Building Products**

Gold Bond Building Products, LLC  
2001 Rexford Road  
Charlotte, NC 28211

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[goldbondbuilding.com](http://goldbondbuilding.com)

# Gold Bond® Fire-Shield® Gypsum Board

**Technical Information**  
800.NATIONAL • 800.628.4662

## DESCRIPTION

Gold Bond® Fire-Shield® Gypsum Board consists of a fire-resistant gypsum core with a heavy, natural finish and 100-percent recycled paper on the face and back sides. The face paper folds around the long edges to reinforce and protect the core, and the ends are cut square and finished smooth.

Use it for interior, fire-rated wall and ceiling applications. A specially formulated Type C core is also available where required.

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

**Finishing:** Long edges of the boards are tapered or square. Tapered edges allow joints to be reinforced with joint tape and concealed with joint compounds or setting compounds.

## BASIC USES

### Applications

Use 1/2 in. (12.7 mm) Type C and 5/8 in. (15.9 mm) Fire-Shield Gypsum Boards on walls and ceilings in fire-rated construction where the framing members are spaced up to 24 in. (610 mm) o.c.

### Advantages

- Approved component in specific UL-rated designs.
- Lightweight and cost-efficient material that is compatible with a wide range of decorative finishes.
- Cuts easily for quick installation, permitting painting or other decoration and the installation of metal or wood trim almost immediately.
- 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.
- Dimensionally stable under changes in temperature and relative humidity and resists warping, rippling, buckling and sagging.
- 5/8 in. Fire-Shield products provide 1-hour fire ratings with fewer fasteners using MaX 12, the 12 in. o.c. optimized fastener pattern for perimeter and field in UL designs U420, U465, V417, V438, V450, V482, V483, V486, V488, W417, W421 and W444. Save time, money and installation costs with MaX 12. Visit [MaX12.com](http://MaX12.com) for more information.
- Features the GridMarX® preprinted fastening guide 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: [calrecycle.ca.gov/greenbuilding/specs/section01350](http://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.
- 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.
- 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 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.

(Continued on page 3)

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Submittal Approvals: (Stamps or Signatures)



# Gold Bond® Fire-Shield® Gypsum Board

## TECHNICAL DATA

<b>Physical Properties</b>	<b>1/2" Fire-Shield C</b>	<b>5/8" Fire-Shield X</b>	<b>5/8" Fire-Shield C</b>
<b>Thickness<sup>1</sup>, Nominal</b>	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), 54" (1,372 mm)	4' (1,219 mm), 54" (1,372 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)
<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>	Square or Tapered	Square or Tapered	Square or Tapered
<b>Flexural Strength<sup>1</sup>, Perpendicular</b>	≥ 107 lbf. (476 N)	≥ 147 lbf. (654 N)	≥ 147 lbf. (654 N)
<b>Flexural Strength<sup>1</sup>, Parallel</b>	≥ 36 lbf. (160 N)	≥ 46 lbf. (205 N)	≥ 46 lbf. (205 N)
<b>Humidified Deflection<sup>1</sup></b>	≤ 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)	≥ 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)	15' (4,572 mm)
<b>Thermal Resistance<sup>5</sup></b>	R = .45	R = .56	R = .56
<b>Product Standard Compliance</b>	ASTM C 1396	ASTM C 1396	ASTM C 1396
<b>Fire-Resistance Characteristics</b>			
<b>Core Type</b>	Type C	Type X	Type C
<b>UL Type Designation</b>	FSW-C	FSW	FSW-C
<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 E119 Standard Test Methods for Fire Tests of Building Construction and Materials			
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-214, Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels			
Gypsum Association, GA-216, Application and Finishing of Gypsum Panel Products			
Gypsum Association, GA-238, Guidelines for Prevention of Mold Growth on Gypsum Board			
Gold Bond Building Products, LLC Manufacturer Standards, NGC Construction Guide			

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.



# Gold Bond® Fire-Shield® Gypsum Board

(Continued from page 1)

## Finishing

Refer to GA-214, *Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels*, to determine the level of finishing needed to assure a surface properly prepared to accept the desired decoration.

## Decoration

Ensure gypsum board surfaces, including finished joints, are clean, dust-free and gloss-free to achieve best painting results. Apply a coat of 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 the use of textures to hide these minor visual imperfections.

## LIMITATIONS

### General

- 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 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.
- Space supporting framing for single-layer application of 1/2 in. (12.7 mm) and 5/8 in. (15.9 mm) gypsum board a maximum of 24 in. (610 mm) o.c.
- To prevent objectionable sag in gypsum board ceilings, the weight of overlaid, unsupported insulation should not exceed the following recommendations:

### Ceiling-Supported Insulation

	Type X	Type C	Type C
<b>Thickness, Nominal</b>	5/8" (15.9 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
<b>Framing Spacing</b>	24" o.c. (610 mm)	24" o.c. (610 mm)	24" o.c. (610 mm)
<b>Thickness, Nominal</b>	2.2 psf (10.7 kg/m <sup>2</sup> )	1.3 psf (6.3 kg/m <sup>2</sup> )	2.2 psf (10.7 kg/m <sup>2</sup> )



# Gold Bond® Fire-Shield® Gypsum Board

## FOR MORE INFORMATION

### Architectural Specifications

Gold Bond Building Products CSI MasterFormat® 3-part guide specifications are downloadable as editable Microsoft® Word documents at: [goldbondbuilding.com](http://goldbondbuilding.com).



### Latest Technical Information and Update

Visit [goldbondbuilding.com](http://goldbondbuilding.com) or call National Gypsum Company Construction Services: 1-800-NATIONAL (628-4662).

*Technical Information Información Técnica*

**1-800-NATIONAL®**  
1-800-628-4662

National Gypsum Company is the exclusive service provider for products manufactured by Gold Bond Building Products, LLC.

The Gold Bond family of products is manufactured by Gold Bond Building Products, LLC.

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**Description**

**ToughRock® Fireguard X™ and ToughRock® Fireguard C® Gypsum Board** have noncombustible (per ASTM E136 or CAN/ULC S114), dimensionally stable gypsum cores. The core has been reinforced with the addition of glass fibers, increasing its strength and its resistance to the passage of heat. The surfacings on both faces and on the long edges are 100% recycled paper. The front face paper is white; the back face paper is gray. The ends are square cut.

Georgia-Pacific ToughRock Gypsum Board products are GREENGUARD and GREENGUARD Gold Certified for low emissions of volatile organic compounds (VOCs). They are listed in CHPS® High Performance Product Database as low emitting products.

**Primary Uses**

ToughRock Fireguard X and Fireguard C Gypsum Board are wall or ceiling covering materials for use in building construction. Both are designed for direct mechanical attachment to wood or metal framing for use in building assemblies with a designated fire resistance rating.

A specially formulated gypsum core which includes glass fibers enables ToughRock Fireguard X and Fireguard C Gypsum Board to help protect framing members from the spread of fire. With joints covered, ToughRock Fireguard X and Fireguard C Gypsum Board will resist the passage of smoke.

ToughRock Fireguard X and Fireguard C Gypsum Board are manufactured with a paper surfacing designed to be receptive to joint treatment, paint, wall covering, or textured coatings.

**Limitations**

- ToughRock Fireguard X and Fireguard C Gypsum Board are nonstructural products and should not be used as a nailing base or to support heavy wall mounted objects.
- They are intended for interior applications and must be kept dry and clean and not used where exposure to moisture is extreme or continuous.
- Do not use ToughRock Fireguard X and Fireguard C Gypsum Board where there is prolonged exposure to temperatures exceeding 125°F (52°C) and/or continuous exposure to extreme humidity, e.g., located adjacent to wood-burning stoves, heating appliances, electric lighting and hot air flues.

**Applicable Standards**

Manufactured to meet ASTM C1396 Section 5, CSA-A82.27-M; Federal SS-L-30D, Type III, Grade X and SS-6-30D.

**Building Code Conformity**

ToughRock Fireguard X and Fireguard C Gypsum Board conform to the requirements of uniform IBC/IRC building codes for its intended use.

**Sizes**

	Fireguard X™	Fireguard C®	Fireguard C®
Thickness, nominal	5/8" (15.9 mm)	5/8" (15.9 mm)	1/2" (12.7 mm)
Widths, nominal	48" (1220 mm)	48" (1220 mm)	48" (1220 mm)
Lengths, standard	8'-14' (2440-4270 mm)	8'-14' (2440-4270 mm)	8'-14' (2440-4270 mm)

**Edges**

Tapered, square, or tapered with rounded edges.

**Supplemental Materials**

Corner beads and trim, expansion joints, joint tape, joint compound.

**Technical Data**

Flame spread rating of 15 and smoke developed 0, when tested in accordance with ASTM E84. The core is noncombustible when tested in accordance with ASTM E136.

The 5/8" (15.9 mm) ToughRock Fireguard X is UL classified, Type X.

The 1/2" (12.7 mm) ToughRock Fireguard C is UL Type TG-C, and ULC classified, Type C.

The 5/8" (15.9 mm) ToughRock Fireguard C is UL Type TG-C, and ULC classified, Type C.

**Fire Resistance Ratings**

ToughRock Fireguard X and Fireguard C Gypsum Board meet the criteria for Type X special fire resistance, as defined in ASTM C1396. ToughRock Fireguard X and Fireguard C Gypsum Board are classified for fire-rated assemblies by Underwriters Laboratories LLC (UL).

**Sound Control**

ToughRock Fireguard X and Fireguard C Gypsum Board can achieve designated Sound Transmission Class (STC) values when used in properly designed constructions.

Sound rated assemblies require sealing at top, bottom, intersections and other locations where sound leaks may develop.

**Application Standards**

ToughRock Fireguard X and Fireguard C Gypsum Board may be applied according to the Gypsum Association Publication GA-216 or ASTM C840 for non-fire rated construction.

For fire resistance rated construction application regarding board orientation, fastener type and spacing shall be consistent with the tested construction details for Type X Gypsum Board. These details are published in the Gypsum Association "Fire Resistance Design Manual GA-600," "UL Fire Resistance Directory," and "Intertek Testing Services/Warnock Hersey Listings Directory."

**Handling Precautions**

Stack gypsum board flat on a level surface. As individual sheets are removed for installation, they should be raised up on edge carefully and carried in a vertical position. Appropriate handling is also outlined in Gypsum Association Publications GA-216 and GA-801.

Take care to avoid impact, undue flexing, and subsequent damage to board edges, ends, and corners. Avoid scuffing the face to be finished.

**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.

**Material Safety Data Sheet**

Material Safety Data Sheet (MSDS) is available upon request or online at [www.buildgp.com/safetyinfo](http://www.buildgp.com/safetyinfo).

*continued* →

**Submittal Approvals**

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Date \_\_\_\_\_

**Stamps/Signatures**

### Board Decoration—Application Standards

ToughRock® Fireguard X™ and Fireguard C® Gypsum Board are designed to accept most types of paints, texture and wall covering materials. Georgia-Pacific Gypsum strongly recommends priming the surface with a full-bodied, quality latex primer before applying a final decorative material. Priming will equalize the suction variation between the joint compounds and the paper surface. If glossy paints are used in such areas as kitchens or bathrooms, skim coat joint compound over the entire surface to reduce highlighting or joint photographing. This method is also recommended in areas with severe natural or artificial side lighting.

Georgia-Pacific Gypsum recommends application of a sealer prior to applying wallpaper or other wall covering to the board so that the board surface will not be damaged if the covering is subsequently removed during redecorating. Joint treatment must be thoroughly dry before proceeding with primer application and final decoration. Refer to Gypsum Association Publications GA-214 and GA-216 for joint treatment and finishing recommendations.

### Physical Properties

Properties	ToughRock® Fireguard X™	5/8" ToughRock® Fireguard C®	1/2" ToughRock® Fireguard C®
Thickness, nominal inches	5/8" (15.9 mm), ± 1/64" (0.4 mm)	5/8" (15.9 mm), ± 1/64" (0.4 mm)	1/2" (12.7 mm), ± 1/64" (0.4 mm)
Width, nominal	4' (1220 mm), 54" (1372 mm), 60" (1524 mm) ± 3/32" (2.4 mm)	4' (1220 mm) ± 3/32" (2.4 mm)	4' (1220 mm) ± 3/32" (2.4 mm)
Length, Standard	8' (2440 mm) to 14' (4270 mm), ± 1/4" (6.4 mm)	8' (2440 mm) to 14' (4270 mm), ± 1/4" (6.4 mm)	8' (2440 mm) to 14' (4270 mm), ± 1/4" (6.4 mm)
Weight <sup>1</sup> , lbs./sq. ft., nominal (kg/m <sup>2</sup> )	2.2 (10.7)	2.3 (11.2)	2.0 (9.0)
Edges	Tapered, square or tapered with rounded edges	Tapered, square or tapered with rounded edges	Tapered, square or tapered with rounded edges
Flexural Strength <sup>2</sup> spacing, min.			
Parallel, lbf. (N)	≥ 46 (205)	≥ 46 (205)	≥ 36 (160)
Perpendicular, lbf. (N)	≥ 147 (654)	≥ 147 (654)	≥ 107 (476)
R Value, ft <sup>2</sup> •°F•hr/BTU (m <sup>2</sup> •K/W)	0.56 est. (0.10)	0.56 est. (0.10)	0.48 est. (0.08)
Nail Pull Resistance <sup>2</sup> , minimum, lbf. (N)	≥ 87 (387)	≥ 87 (389)	≥ 77 (343)
Hardness <sup>2</sup> , lbf. (N) (core, edges and ends)	≥ 15 (67)	≥ 15 (67)	≥ 15 (67)
Humidified Deflection <sup>2</sup> , max.	5/8" (16 mm)	5/8" (16 mm)	10/8" (32 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 <sup>3</sup> (per ASTM E84)			
Flame Spread	15	15	15
Smoke Developed	0	0	0
(Core is noncombustible when tested in accordance with ASTM E136.)			

<sup>1</sup> Represents approximate weight for design and shipping purposes. Actual weight may vary depending on manufacturing location and other factors.

<sup>2</sup> Specified minimum values are as defined in ASTM C1396.

<sup>3</sup> Products qualify for NFPA Class A or IBC Class 1.



U.S.A. Georgia-Pacific Gypsum LLC  
 Canada Georgia-Pacific Gypsum II LLC  
 Canada Georgia-Pacific Canada LP

**SALES INFORMATION AND ORDER PLACEMENT**  
 U.S.A. West: **1-800-824-7503**  
          Midwest: **1-800-876-4746**  
          South Central: **1-800-231-6060**  
          Southeast: **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 INFORMATION**  
 U.S.A. and Canada: **1-800-225-6119**, [www.gpgypsum.com](http://www.gpgypsum.com)

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**WARRANTIES, REMEDIES AND TERMS OF SALE** For current warranty information for this product, please go to [www.gpgypsum.com](http://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](http://www.gpgypsum.com).

**UPDATES AND CURRENT INFORMATION** The information in this document may change without notice. Visit our website at [www.gpgypsum.com](http://www.gpgypsum.com) for updates and current information.

**CAUTION For product fire, safety and use information, go to [www.buildgp.com/safetyinfo](http://www.buildgp.com/safetyinfo) or call 1-800-225-6119.**

**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.