

GYPSUM BOARD Guide Specification

National Gypsum Company

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying gypsum board products and their installation. The specifier needs to edit these guide specifications to fit the needs of each specific project. Contact National Gypsum Company to assist in appropriate product selections.)

Specifier Notes included in (italicized red text) are included to provide assistance in selecting appropriate text for inclusion in a Specification. [Bold text] indicates a selection is required. Text in the brackets may not be the only options available, but are recommended or common selections.)

SECTION 09 29 00 GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Standard Gypsum Board (Gold Bond® BRAND Gypsum Board)
- B. Fire-Resistance Rated Gypsum Board (Gold Bond® BRAND Fire-Shield® Gypsum Board, and Gold Bond® BRAND Fire-Shield® C Gypsum Board)
- C. Lightweight Gypsum Board (Gold Bond® BRAND High Strength LITE™ Gypsum Board, Gold Bond® BRAND High Strength Fire-Shield® LITE™ Gypsum Board and Gold Bond® BRAND High Strength Fire-Shield® LITE™ 30 Gypsum Board)
- D. Mold and Moisture Resistant Gypsum Board (Gold Bond® BRAND XP® Gypsum Board)
- E. Fire-Resistance Rated Gypsum Board with Enhanced Mold and Mildew Resistance (Gold Bond® BRAND XP® Fire-Shield® Gypsum Board, and Gold Bond® BRAND XP® Fire-Shield® C Gypsum Board)
- F. Exterior Gypsum Ceiling Board (Gold Bond® BRAND Exterior Soffit Board, and Gold Bond® BRAND Fire-Shield® Exterior Soffit Board)
- G. Gypsum Shaftliner Panel (Gold Bond® BRAND 1" Fire-Shield® Shaftliner)
- H. Mold and Moisture Resistant Gypsum Shaftliner Panel (Gold Bond® BRAND 1" Fire-Shield® Shaftliner XP®)
- I. Extended Exposure Shaftliner Panel (Gold Bond® BRAND eXP® Extended Exposure Shaftliner)
- J. Abuse Resistant Gypsum Board (Gold Bond® BRAND Hi-Abuse® XP® Gypsum Board)
- K. High Impact Gypsum Board (Gold Bond® BRAND Hi-Impact® XP® Gypsum Board)
- L. Flexible Gypsum Board (Gold Bond® BRAND High Flex® Gypsum Board)
- M. Acoustically Enhanced Gypsum Board (Gold Bond® BRAND SoundBreak® XP® Gypsum Board)
- N. Interior Extended Exposure Gypsum Panel (Gold Bond® BRAND eXP® Interior Extreme® Gypsum Panel, Gold Bond® BRAND eXP® Fire-Shield® Interior Extreme® Gypsum Panel, Gold Bond® BRAND eXP® Interior Extreme® IR Gypsum Panel, and Gold Bond® BRAND eXP® Interior Extreme® AR Gypsum Panel)

- O. Mold and Mildew Resistant Tile Backer (Gold Bond® BRAND eXP® Tile Backer)
- P. Cement Board (PermaBase® BRAND Cement Board)
- Q. Flexible Cement Board (PermaBase Flex® BRAND Cement Board)
- R. Gypsum Sheathing (Gold Bond® BRAND Gypsum Sheathing)
- S. Fire-Resistance Rated Gypsum Sheathing (Gold Bond® BRAND Fire-Shield® Jumbo Gypsum Sheathing)
- T. Extended Exposure Sheathing (Gold Bond® BRAND eXP® Extended Exposure Gypsum Sheathing)
- U. Fire-Resistance Rated Extended Exposure Gypsum Sheathing (Gold Bond® BRAND eXP® Fire-Shield® Extended Exposure Gypsum Sheathing)

1.2 REFERENCE STANDARDS

(Specifier Note: EDIT list of reference standards based on standards that remain in the text body once section has been edited for specific project.)

- A. American National Standards Institute (ANSI)
 - 1. ANSI A 108.11 - Interior Installation of Cementitious Backer Units
 - 2. ANSI A 118.9 - American National Standard Specification for Test Methods and Specifications for Cementitious Backer Units
- B. ASTM International
 - 1. ASTM C 473 - Standard Test Methods for Physical Testing of Gypsum Panel Products
 - 2. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board
 - 3. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications
 - 4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
 - 5. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
 - 6. ASTM C 1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
 - 7. ASTM C 1178 - Standard Specification for Coated Glass Mat Water Resistant Gypsum Backing Panel
 - 8. ASTM C 1280 - Standard Specification for Application of Gypsum Sheathing
 - 9. ASTM C 1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units
 - 10. ASTM C 1396 - Standard Specification for Gypsum Board
 - 11. ASTM C 1629 - Standard Classification for Abuse Resistant Nondecorated Interior Gypsum Panel Products and Fiber reinforced Cement Panels
 - 12. ASTM C 1658 - Standard Specification for Glass Mat Gypsum Panels
 - 13. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
 - 14. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
 - 15. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
 - 16. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

17. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials
18. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials
19. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 176; C.
20. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

C. Gypsum Association (GA)

1. GA-214 - Recommended Levels of Gypsum Board Finish
2. GA-216 - Application and Finishing of Gypsum Panel Products
3. GA-253 - Application of Gypsum Sheathing

1.3 SUBMITTALS

(Specifier Note: GREENGUARD certification is optional, visit www.greenguard.org for program information. DELETE paragraph and sub-paragraphs below if not project specific.)

A. GREENGUARD Submittal:

(Specifier Note: Products that have achieved GREENGUARD Children and Schools Certification meet stricter emission guidelines than those with GREENGUARD Indoor Air Quality Certification. GREENGUARD Children and Schools Certification also meet CHPS Low-Emitting Materials.)

The following National Gypsum products are GREENGUARD Indoor Air Quality Certified®:

- *ProForm Brand All Purpose Ready Mix Joint Compound*
- *ProForm Brand All Purpose Machine Grade Ready Mix Joint Compound*
- *ProForm Brand Multi-Use Ready Mix Joint Compound*
- *ProForm Brand Taping Ready Mix Joint Compound*
- *ProForm Brand Topping Ready Mix Joint Compound*
- *ProForm Brand Lite Ready Mix Joint Compound*
- *ProForm Brand Lite Blue Ready Mix Joint Compound*
- *ProForm Brand Lite Ready Mix Joint Compound with Dust-Tech*

The following National Gypsum products bear the GREENGUARD Children & SchoolsSM Certified mark:

- *Gold Bond Brand Gypsum Board*
- *Gold Bond Brand Fire-Shield Gypsum Board*
- *Gold Bond Brand High Strength LITE Gypsum Board*
- *Gold Bond Brand High Strength Fire-Shield LITE Gypsum Board*
- *Gold Bond Brand High Strength Fire-Shield LITE 30 Gypsum Board*
- *Gold Bond Brand Hi-Abuse XP Gypsum Board*
- *Gold Bond Brand Hi-Impact XP Gypsum Board*
- *Gold Bond Brand SoundBreak XP Gypsum Board*
- *Gold Bond Brand XP Gypsum Board*
- *Gold Bond Brand eXP Interior Extreme Gypsum Board*
- *Gold Bond Brand eXP Interior Extreme AR Gypsum Board*
- *Gold Bond Brand eXP Interior Extreme IR Gypsum Board*
- *Gold Bond Brand eXP Tile Backer*
- *PermaBase Brand Cement Board*
- *PermaBase Brand Flex Cement Board*
- *ProForm Brand Quick Set Setting Joint Compound*
- *ProForm Brand Quick Set Lite Setting Joint Compound*
- *ProForm Brand XP Ready Mix Joint Compound*

1. Product Certificate for GREENGUARD **[Indoor Air Quality] [Children & Schools]**: For products and materials required to comply with requirements for minimum chemical emissions

PART 2 - PRODUCTS

2.1 MANUFACTURER

(Specifier Note: Throughout Part-2 maintain brand names when proprietary specification is acceptable. Use generic term when project must be competitively bid. CONFIRM product requirements and characteristics prior to listing products of other manufacturers.)

- A. Products of National Gypsum Company

2.2 STANDARD GYPSUM BOARD

- A. Basis of Design: Gold Bond® BRAND Gypsum Board

1. Panel Physical Characteristics
 - a. Core: Regular gypsum core
 - b. Surface Paper: 100 percent recycled content paper on front, back and long edges
 - c. Long Edges: **[Square] [Tapered]**
 - d. Overall thickness: **[1/4 inch] [3/8 inch] [1/2 inch]**
 - e. Panel complies with requirements of ASTM C 1396

2.3 FIRE-RESISTANCE RATED GYPSUM BOARD

- A. Basis of Design: Gold Bond® BRAND Fire-Shield® Gypsum Board

1. Type X, Panel Physical Characteristics
 - a. Core: Fire-resistance rated gypsum core
 - b. Surface paper: 100 percent recycled content paper on front, back and long edges
 - c. Long Edges: **[Square] [Tapered]**
 - d. Overall thickness: 5/8 inch
 - e. Panel complies with Type X requirements of ASTM C 1396

(Specifier Note: National Gypsum Co, Gold Bond BRAND Fire-Shield C Gypsum Board has enhanced fire-resistance characteristics from the Gold Bond BRAND Fire-Shield X Gypsum Board. In non-proprietary rated designs, Type C may be used to replace Type X. Type X cannot be used to replace Type C fire-resistance rated gypsum board. Assembly design should be used to determine use of Type C fire-resistance rated gypsum board.)

- B. Basis of Design: Gold Bond® BRAND Fire-Shield C™ Gypsum Board

1. Type C, Panel Physical Characteristics
 - a. Core: Enhanced fire-resistance rated (Type C) gypsum core
 - b. Surface paper: 100 percent recycled content paper on front, back and long edges
 - c. Long Edges: **[Square] [Tapered]**
 - d. Overall thickness: **[1/2 inch] [5/8 inch]**
 - e. Panel complies with Type X requirements of ASTM C 1396

2.4 LIGHTWEIGHT GYPSUM BOARD

A. Basis of Design: Gold Bond® BRAND High Strength LITE™ Gypsum Board

1. Panel Physical Characteristics

- a. Core: Regular gypsum core
- b. Surface paper: 100 percent recycled content paper on front, back and long edges
- c. Long Edges: Tapered
- d. Overall thickness: 1/2 inch
- e. Panel complies with requirements of ASTM C 1396

B. Basis of Design: Gold Bond® BRAND High Strength Fire-Shield® LITE™ Gypsum Board

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core
- b. Surface paper: 100 percent recycled content paper on front, back and long edges
- c. Long Edges: Square or Tapered
- d. Overall thickness: 5/8 inch
- e. Panel complies with Type X requirements of ASTM C 1396

(Specifier Note: National Gypsum Co, Gold Bond BRAND High Strength Fire-Shield LITE™ 30 is for use in non-rated assemblies but can be used in specific 30-minute rated assemblies, contact National Gypsum Co, for appropriate tested assemblies.)

C. Basis of Design: Gold Bond® BRAND High Strength Fire-Shield® LITE™ 30 Gypsum Board

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated (Non-Type X) gypsum core
- b. Surface paper: 100 percent recycled content paper on front, back and long edges
- c. Long Edges: Tapered
- d. Overall thickness: 5/8 inch
- e. Panel complies with requirements of ASTM C 1396

2.5 MOLD AND MOISTURE RESISTANT GYPSUM BOARD

A. Basis of Design: Gold Bond® BRAND XP Gypsum Board

1. Panel Physical Characteristics

- a. Core: Mold and moisture resistant gypsum core
- b. Surface paper: 100 percent recycled content moisture/mold/mildew resistant paper on front, back, and long edges
- c. Long Edges: **[Square] [Tapered]**
- d. Overall thickness: 1/2 inch
- e. Panel complies with requirements of ASTM C 1396

(Specifier Note: National Gypsum Co, Gold Bond BRAND XP Gypsum Board has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

(Specifier Note: DELETE paragraph below if environmental requirement is not project specific)

- g. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

2.6 FIRE-RESISTANCE RATED GYPSUM BOARD WITH ENHANCED MOLD AND MILDEW RESISTANCE

A. Basis of Design: Gold Bond® BRAND XP® Fire-Shield® Gypsum Board

1. Type X, Panel Physical Characteristics

- a. Core: Mold and moisture resistant, fire-resistance rated gypsum core
- b. Surface paper: 100 percent recycled content moisture/mold/mildew resistant paper on front, back and long edges
- c. Long Edges: **[Square] [Tapered]**
- d. Overall thickness: 5/8 inch
- e. Panel complies with Type X requirements of ASTM C 1396

(Specifier Note: National Gypsum Co, Gold Bond BRAND XP Fire-Shield Gypsum Board has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

(Specifier Note: National Gypsum Co, Gold Bond BRAND XP Fire-Shield C Gypsum Board has enhanced fire-resistance characteristics from the Gold Bond BRAND Fire-Shield X Gypsum Board. In non-proprietary rated designs, Type C may be used to replace Type X. Type X cannot be used to replace Type C fire-resistance rated gypsum board. Assembly design should be used to determine use of Type C fire-resistance rated gypsum board.)

B. Basis of Design: Gold Bond® BRAND XP® Fire-Shield® C Gypsum Board

1. Type C, Panel Physical Characteristics

- a. Core: Mold and moisture resistant gypsum core with enhanced fire-resistance (Type C)
- b. Surface paper: 100 percent recycled content moisture/mold/mildew paper on front, back and long edges
- c. Long Edges: **[Square] [Tapered]**
- d. Overall thickness: **[5/8 inch] [1/2 inch]**
- e. Panel complies with requirements Type X of ASTM C 1396

(Specifier Note: National Gypsum Co, Gold Bond BRAND XP Fire-Shield C Gypsum Board has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical ASTM D 3273 is on a 10 point scale.)

- f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

2.7 EXTERIOR GYPSUM CEILING BOARD

A. Basis of Design: Gold Bond® BRAND Exterior Soffit Board

1. Panel Physical Characteristics

- a. Core: Regular gypsum core
- b. Surface paper: 100 percent recycled content extra resistance to moisture and sagging
- c. Long Edges: Beveled -Tapered
- d. Overall thickness: 1/2 inch

- e. Panel complies with requirements of ASTM C 1396
- B. Basis of Design: Gold Bond® BRAND Fire-Shield® Exterior Soffit Board
- 1. Panel Physical Characteristics
 - a. Core: Fire-resistance rated gypsum core
 - b. Surface paper: 100 percent recycled content extra resistance to moisture and sagging
 - c. Long Edges: Beveled -Tapered
 - d. Overall thickness: 5/8 inch
 - e. Panel complies with Type X requirements of ASTM C 1396

2.8 GYPSUM SHAFTLINER PANEL

- A. Basis of Design: Gold Bond® BRAND 1" Fire-Shield® Shaftliner
- 1. Panel Physical Characteristics
 - a. Core: Fire-resistance rated gypsum core
 - b. Surface Paper: 100 percent recycled content moisture resistant paper on front, back, and long edges
 - c. Long Edges: Beveled
 - d. Overall Thickness: 1 inch
 - e. Panel complies with Type X requirements of ASTM C 1396

2.9 MOLD AND MOISTURE RESISTANT GYPSUM SHAFTLINER PANEL

- A. Basis of Design: Gold Bond® BRAND 1" Fire-Shield® Shaftliner XP®
- 1. Panel Physical Characteristics
 - a. Core: Fire-resistance rated, mold resistant gypsum core
 - b. Surface Paper: 100 percent recycled content moisture and mold resistant paper on front, back, and long edges
 - c. Long Edges: Beveled
 - d. Overall Thickness: 1 inch
 - e. Panel complies with Type X requirements of ASTM C 1396
- (Specifier Note: National Gypsum Co, Gold Bond BRAND Fire-Shield Shaftliner XP has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)*
- f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

2.10 EXTENDED EXPOSURE GYPUSM SHAFTLINER

- A. Basis of Design: Gold Bond® BRAND eXP® Extended Exposure Shaftliner
- 1. Performance Criteria - Wall Assembly STC: **[37] [40] [42] [45] [47] [50] [51]**
 - 2. Panel Physical Characteristics:
 - a. Core: Fire-resistance rated gypsum core, with additives to enhance moisture and mold resistance
 - b. Facing: Water-resistant glass mat on front, back, and long edges
 - c. Long Edges: Double Beveled
 - d. Overall Thickness: 1 inch

- e. Complies with Type X requirements of ASTM C 1396 and ASTM C 1658

(Specifier Note: National Gypsum Co, Gold Bond BRAND Extended Exposure Shaftliner has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- f. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273.

2.11 ABUSE RESISTANT GYPSUM BOARD

(Specifier Note: Abuse Resistant gypsum board should be specified in applications where there is a need to provide additional surface protection from scuffs, scratches and dents. Impact resistant gypsum board should be specified for applications where impact damage is a concern. Both comply with the fire resistance requirements for Type X gypsum board.)

(Specifier Note: Refer to Acoustically Enhanced Gypsum Board Article for SoundBreak XP Gypsum Board and Interior Extended Exposure Article for EXP Interior Extreme AR Gypsum Panel - both are abuse resistant products with other specialty characteristics.)

- A. Basis of Design: Gold Bond BRAND Hi-Abuse® XP® Gypsum Board

(Specifier Note: STC rating may not be of importance for specific project and may be omitted from specification in which case there the default required by the building code will dictate.)

- B. Performance Criteria - Wall Assembly STC: **[40] [44] [47] [52]**

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core, with additives to enhance surface indentation resistance and impact resistance
- b. Surface paper: Abrasion resistant, 100 percent recycled content moisture/mold/mildew resistant paper on front, back and long edges
- c. Long Edges: **[Square] [Tapered]**
- d. Overall thickness: 5/8 inch
- e. Panel complies with Type X requirements of ASTM C 1396
- f. Surface Abrasion Resistance: Classification Level 3 in accordance with ASTM C 1629
- g. Indentation Resistance: Classification Level 1 in accordance with ASTM C 1629.
- h. Soft Body Impact Resistance: Classification Level 2 in accordance with ASTM C 1629
- i. Hard Body Impact Resistance: Classification Level 1 in accordance with ASTM C 1629.

(Specifier Note: National Gypsum Co, Hi-Abuse BRAND XP Gypsum Board has mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- j. Mold/Mildew Resistance: score of 10 when tested in accordance with ASTM D 3273.

(Specifier Note: DELETE environmental requirement if not project specific.)

- k. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

2.12 HIGH IMPACT GYPSUM BOARD

(Specifier Note: Impact resistant gypsum board should be specified for applications where impact damage is a concern. Abuse Resistant gypsum board should be specified in applications where there is a need to provide additional surface protection from scuffs, scratches and dents. Both comply with the fire resistance requirements for Type X gypsum board.)

(Specifier Note: Refer to Interior Extended Exposure Article for EXP Interior Extreme IR Gypsum Panel - an impact resistant product with other specialty characteristics.)

A. Basis of Design: Gold Bond BRAND Hi-Impact® XP® Gypsum Board

1. Performance Criteria - Wall Assembly STC: **[40] [44] [47] [52]**
2. Panel Physical Characteristics
 - a. Core: Fire-resistance rated gypsum core, with additives to enhance mold/mildew resistance, surface indentation resistance, impact resistance and moisture and mold resistant
 - b. Surface paper: Abrasion resistant, 100 percent recycled content moisture/mold/mildew resistant paper on front, back and long edges
 - c. Embedded fiberglass mesh
 - d. Long Edges: Tapered
 - e. Overall thickness: 5/8 inch
 - f. Panel complies with Type X requirements of ASTM C 1396
 - g. Surface Abrasion Resistance: Classification Level 3 in accordance with ASTM C 1629
 - h. Indentation Resistance: Classification Level 1 in accordance with ASTM C 1629.
 - i. Soft Body Impact Resistance: Classification Level 3 in accordance with ASTM C 1629
 - j. Hard Body Impact Resistance: Classification Level 3 in accordance with ASTM C 1629.

(Specifier Note: National Gypsum Co, Hi-Impact XP Gypsum Board has the following mold/mildew resistance characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- k. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273.

(Specifier Note: DELETE if environmental requirement is not project specific.)

- l. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

2.13 FLEXIBLE GYPSUM BOARD

A. Basis of Design: Gold Bond® BRAND High Flex Gypsum Board

1. Panel Physical Characteristics
 - a. Core: Regular gypsum core
 - b. Surface paper: 100 percent recycled content moisture resistant paper on front, back, and long edges
 - c. Long Edges: Eased
 - d. Overall thickness: 1/4 inch
 - e. Panel complies with requirements of ASTM C 1396

2.14 ACOUSTICALLY ENHANCED GYPSUM BOARD

A. Basis of Design: Gold Bond® BRAND SoundBreak® XP® Gypsum Board

(Specifier Note: STC is dependent on the construction of the wall assembly, COORDINATE with drawings. Refer to National Gypsum Co. product information for wall assembly and Acoustical Selector Guide for assistance in correctly selecting, drawing and specifying.)

1. Performance Criteria - Wall Assembly STC: (wood stud construction) **[52] [67]** (metal stud construction) **[55] [57] [59] [61]**
2. Panel Physical Characteristics
 - a. Core
 - 1) Inner layer: Viscoelastic damping polymer
 - 2) Outer layers: Enhanced, high density mold-resistant gypsum core
 - b. Overall thickness: **[1/2 inch] [5/8 inch, Type X]**
 - c. Long Edges: Tapered
 - d. Mold Resistance:
 - 1) 10 when tested in accordance with ASTM D 3273
 - 2) 0 when tested in accordance with ASTM G 21
 - e. Surface Abrasion Resistance: Classification Level 3 in accordance with ASTM C 1629
 - f. Indentation Resistance: Classification Level 1 in accordance with ASTM C 1629
 - g. Soft Body Impact Resistance: Classification Level 2 in accordance with ASTM C 1629
 - h. Hard Body Impact Resistance: Level 1 in accordance with ASTM C 1629
 - (Specifier Note: DELETE paragraph below if environmental requirement is not project specific.)*
 - i. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

2.15 INTERIOR EXTENDED EXPOSURE GYPSUM PANELS

A. Basis of Design: Gold Bond® BRAND EXP® Interior Extreme® Gypsum Panel

1. Panel Physical Characteristics:
 - a. Core: Regular gypsum core
 - b. Thickness: 1/2 inch
 - c. Long Edges: Tapered. Wrapped with coated fiberglass mat
 - d. Mold Resistance: 10 when tested in accordance with ASTM D 3273
 - e. Flexural Strength - Parallel: 80 lbs, when tested in accordance with ASTM C 473
 - f. Humidified Deflection: less than 1/4 inch when tested in accordance with ASTM C 473
 - g. Nail pull resistance: 80 lbs, when tested in accordance with ASTM C 473
 - h. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
 - i. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
 - j. Combustibility: Noncombustible when tested in accordance with ASTM E 136
 - k. Flame spread/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
 - l. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

B. Basis of Design: Gold Bond® BRAND EXP® Fire-Shield® Interior Extreme® Gypsum Panel

1. Panel Physical Characteristics
 - a. Core: Fire-resistance rated gypsum core

- b. Thickness: 5/8 inch
- c. Long Edges: Tapered. Wrapped with coated fiberglass mat
- d. Mold Resistance: 10 when tested in accordance with ASTM D 3273
- e. Flexural Strength - Parallel: 100 lbs, when tested in accordance with ASTM C 473
- f. Humidified Deflection: less than 1/8 inch when tested in accordance with ASTM C 473
- g. Nail pull resistance: 90 lbs, when tested in accordance with ASTM C 473
- h. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
- i. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
- j. Combustibility: Noncombustible when tested in accordance with ASTM E 136
- k. Flame Spread/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
- l. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

C. Basis of Design: Gold Bond® BRAND eXP® Interior Extreme® AR Gypsum Panel

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core, with additives to enhance mold/mildew resistance.
- b. Thickness: 5/8 inch
- c. Facers: Mold and moisture resistance coated fiberglass mat for abrasion resistance.
- d. Long Edges: Tapered. Wrapped with coated fiberglass mat
- e. Mold Resistance: 10 when tested in accordance with ASTM D 3273
- f. Flexural Strength: Parallel greater than 100 lbf.; Perpendicular greater than 140 lbf.; when tested in accordance with ASTM C 473
- g. Humidified Deflection: less than 1/8 inch when tested in accordance with ASTM C 473
- h. Nail pull resistance: 90 lbs, when tested in accordance with ASTM C 473
- i. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
- j. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
- k. Combustibility: Noncombustible when tested in accordance with ASTM E 136
- l. Flame Spread/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
- m. Surface Abrasion Resistance: Classification Level 3 in accordance with ASTM C 1629
- n. Indentation Resistance: Classification Level 1 in accordance with ASTM C 1629.
- o. Soft Body Impact Resistance: Classification Level 2 in accordance with ASTM C 1629
- p. Hard Body Impact Resistance: Classification Level 1 in accordance with ASTM C 1629.
- q. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

D. Basis of Design: Gold Bond® BRAND eXP® Interior Extreme® IR Gypsum Panel

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core, with additives to enhance mold/mildew resistance, and embedded fiberglass mesh for surface indentation resistance and impact resistance.
- b. Thickness: 5/8 inch
- c. Facer: Mold and moisture resistance coated fiberglass mat for abrasion resistance.
- d. Long Edges: Tapered. Wrapped with coated fiberglass mat
- e. Mold Resistance: 10 when tested in accordance with ASTM D 3273

- f. Flexural Strength: Parallel greater than 100 lbf., Perpendicular greater than 140 lbf., when tested in accordance with ASTM C 473
- g. Humidified Deflection: less than 1/8 inch when tested in accordance with ASTM C 473
- h. Nail pull resistance: 90 lbs, when tested in accordance with ASTM C 473
- i. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
- j. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
- k. Combustibility: Noncombustible when tested in accordance with ASTM E 136
- l. Flame Spreads/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
- m. Surface Abrasion Resistance: Classification Level 3 in accordance with ASTM C 1629
- n. Indentation Resistance: Classification Level 1 in accordance with ASTM C 1629.
- o. Soft Body Impact Resistance: Classification Level 3 in accordance with ASTM C 1629
- p. Hard Body Impact Resistance: Classification Level 2 in accordance with ASTM C 1629.
- q. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials

2.16 MOLD AND MILDEW RESISTANT TILE BACKER

A. Basis of Design: Gold Bond® BRAND EXP® Tile Backer

1. Panel Physical Characteristics

- a. Core: Mold and moisture resistant, **[[fire-resistance rated,] [Fire-Shield Type X,]]** gypsum core
- b. Thickness: **[1/2 inch][5/8 inch, Type X]**
- c. Facer: Fiberglass Mat; moisture resistant, acrylic coated water barrier on front
- d. Long Edges: Square

(Specifier Note: National Gypsum Co, Gold Bond BRAND EXP Tile Backer has the following characteristics. VERIFY conformance of this requirement when specification section must provide products of equivalent design or DELETE when characteristic is not critical.)

- e. Water Absorption: less than 5 percent when tested in accordance with ASTM C 473
- f. Combustibility: Noncombustible when tested in accordance with ASTM E 136
- g. Flame spreads/Smoke Developed: 0/0 when tested in accordance with ASTM E 84
- h. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

(Specifier Note: DELETE paragraph below if environmental requirement is not project specific.)

- i. Environmental Requirements: Provide products that comply with testing and product requirements for low emitting materials
- j. Panel complies with requirements of ASTM C 1178.

2.17 CEMENT BOARD

A. Cement Backerboard Basis of Design: PermaBase® BRAND Cement Board

1. Panel Physical Characteristics

- a. Core: Cementitious, water-durable
- b. Surface: Fiberglass mesh on front and back
- c. Long Edges: Tapered
- d. Overall Thickness: **[1/2 inch] [5/8 inch]**
- e. Panel complies with requirements of ASTM C 1325 and ANSI A 118.9

- f. Density: 72 lbs. per cu. ft.
- g. Water Absorption: Not greater than 8 percent when tested for 24 hours in accordance with ASTM C 473

B. Cement Board Underlayment Basis of Design: PermaBase® BRAND Cement Board

1. Panel Physical Characteristics

- a. Core: Cementitious, water-durable
- b. Surface: Fiberglass mesh on front and back
- c. Long Edges: Tapered
- d. Overall Thickness: 1/4 inch
- e. Panel complies with requirements of ASTM C 1325 and ANSI A118.9
- f. Density: 72 lbs per cu. ft.
- g. Water Absorption: Not greater than 8 percent when tested for 24 hours in accordance with ASTM C 473

2.18 FLEXIBLE CEMENT BOARD

A. Basis of Design: PermaBase Flex® BRAND Cement Board

1. Panel Physical Characteristics

- a. Core: Cementitious, water-durable
- b. Surface: Fiberglass mesh on front and back
- c. Long Edges: Tapered
- d. Overall Thickness: 1/2 inch
- e. Panel complies with requirements of ASTM C 1325 and ANSI A118.9
- f. Density: 72 lbs per cu. ft.
- g. Water Absorption: Not greater than 8 percent when tested for 24 hours in accordance with ASTM C 473

2.19 GYPSUM SHEATHING

A. Basis of Design: Gold Bond® BRAND Gypsum Sheathing

1. Panel Physical Characteristics

- a. Core: Regular
- b. Surface paper: 100 percent recycled content moisture resistant paper on front, back, and long edges
- c. Long Edges: Square
- d. Overall thickness: 1/2 inch
- e. Panel complies with requirements of ASTM C 1396

2.20 FIRE-RESISTANCE RATED GYPSUM SHEATHING

A. Basis of Design: Gold Bond® BRAND Fire-Shield™ Jumbo Gypsum Sheathing

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core
- b. Surface paper: 100 percent recycled content moisture resistant paper on front, back, and long edges
- c. Long Edges: Square

- d. Overall thickness: 5/8 inch
- e. Panel complies with Type X requirements of ASTM C 1396

2.21 EXTENDED EXPOSURE SHEATHING

A. Basis of Design: Gold Bond® BRAND EXP® Extended Exposure Gypsum Sheathing

1. Panel Physical Characteristics

- a. Core: Regular gypsum core, with additives to enhance moisture and mold resistance
- b. Facing: Water-resistant glass mat on both face and back surfaces.
- c. Long Edges: Wrapped with water-repellant glass mat.
- d. Overall thickness: 1/2 inch
- e. Panel complies with requirements of both ASTM C 1177 and C 1396
- f. Racking Strength - Ultimate: 617 lbs/lin ft. when tested in accordance with ASTM E 72
- g. Flexural Strength - Parallel: 80 lbs, when tested in accordance with ASTM C 473
- h. Humidified Deflection: less than 1/8 inch when tested in accordance with ASTM C 473
- i. Nail pull resistance: 80 lbs, when tested in accordance with ASTM C 473
- j. Water Absorption: less than 10 percent when tested in accordance with ASTM C 473
- k. Surface Water Absorption: less than 1 percent when tested in accordance with ASTM C 473
- l. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
- m. Combustibility: Noncombustible when tested in accordance with ASTM E 136
- n. Flame spreads/Smoke Developed: 5/0 when tested in accordance with ASTM E 84
- o. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

2.22 FIRE-RESISTANCE RATED EXTENDED EXPOSURE GYPSUM SHEATHING

A. Basis of Design: Gold Bond® BRAND EXP® Fire-Shield® Extended Exposure Gypsum Sheathing

1. Panel Physical Characteristics

- a. Core: Fire-resistance rated gypsum core, with additives to enhance moisture and mold resistance
- b. Facing: Water-resistant glass mat on both face and back surfaces
- c. Long Edges: Wrapped with water-repellant glass mat
- d. Overall thickness: 5/8 inch
- e. Panel complies with requirements of both ASTM C 1177 and C1396
- f. Classification: Type X, when tested in accordance with ASTM E 119
- g. Racking Strength - Ultimate: 711 lbs/lin ft. when tested in accordance with ASTM E 72
- h. Flexural Strength - Parallel: 90 lbs, when tested in accordance with ASTM C 473
- i. Humidified Deflection: less than 1/8 inch when tested in accordance with ASTM C 473
- j. Nail pull resistance: 90 lbs, when tested in accordance with ASTM C 473
- k. Water Absorption: less than 10 percent when tested in accordance with ASTM C 473
- l. Surface Water Absorption: less than 1 percent when tested in accordance with ASTM C 473
- m. Permeance: greater than 10 perms, when tested in accordance with ASTM E 96
- n. Combustibility: Noncombustible when tested in accordance with ASTM E 136

- o. Flame Spread/Smoke Developed: 5/0 when tested in accordance with ASTM E 84
- p. Mold/Mildew Resistance: 10 when tested in accordance with ASTM D 3273

2.23 ACCESSORY PRODUCTS

(Specifier Note: Acoustical sealant and firestopping putty packs may be specified in other Sections, COORDINATE location of information so that it is not duplicated. National Gypsum Co. recommends the products indicated, other products that conform to the reference standards may be acceptable.)

- A. Acoustical sealant
 - 1. Conform to ASTM C 919
 - 2. VOC content less than 2 g/L
 - 3. Products/Manufacturer
 - a. Grabber Acoustical Sealant GSC
 - b. STI SpecSeal Smoke N Sound Caulk
 - c. BOSS 824 Acoustical Sound Sealant
- B. Firestopping
 - 1. Conform to ASTM E 90
 - 2. Products/Manufacturer
 - a. STI SpecSeal SSP Putty Pads
 - b. BOSS 818 Fire Rated Putty Pads
- C. Fasteners for use with tile backer

(Specifier Note: EDIT fasteners to correspond with rated and non-rated assemblies. Do not use nails with a Fire-rated assembly, only screws.)

- 1. Fasteners for ½ inch thick panels:
 - a. Wood Framing: **[1-1/2 inch minimum galvanized roofing nail] [1-1/4 inch minimum corrosion resistant course thread bugle head]**.
 - b. Metal Framing: 1inch minimum corrosion resistant sharp point or drill point bugle head screw.
- 2. Fasteners for 5/8 inch thick panels:
 - a. Wood Framing: **[1-3/4 inch minimum galvanized roofing nail] [1-1/4 inch minimum corrosion resistant course thread bugle head] [As required in specified fire-rated assembly]**.
 - b. Metal Framing: **[1-1/4 inch minimum corrosion resistant sharp point or drill point bugle head screw] [As required in specified fire-rated assembly]**.
- D. Fasteners for use with cement board
 - 1. PermaBase Cement Board Hi-Lo thread screws (No. 8)
 - a. Wafer head, corrosion-resistant
 - b. Overall Thickness: **[1-1/4 inch] [1-5/8 inch]**
 - c. For use with wood framing and complying with ASTM C 1002
 - 2. PermaBase Cement Board drill point screws (No. 8)

- a. Wafer head, corrosion-resistant
- b. Overall Thickness: **[1-1/4 inch] [1-5/8 inch]**
- c. For use with 20 to 14 ga. Steel framing and complying with ASTM C 1002

E. Joint Treatment

1. Tape:

- a. Paper Tape: 2-1/16 inches wide (ProForm BRAND Joint Tape)
- b. Paper Tape: 2 inches wide with metal strips laminated along the center crease to form inside and outside corners (ProForm BRAND Multi-Flex Tape Bead)
- c. Fiberglass Tape: Nominal 2 inches wide self adhering tape (ProForm BRAND Fiberglass Mesh Tape)

(Specifier Note: PermaBase BRAND Tape is alkali-resistant and should be used with EXP® Tile Backer in both wet and non-wet applications.)

- d. Alkali-resistant Fiberglass Tape: Nominal 2 inches wide polymer coated alkali-resistant mesh tape (PermaBase BRAND Tape)

2. Drying Type Compound:

- a. Ready Mix vinyl base compound (ProForm BRAND All Purpose Ready Mix Joint Compound; ProForm Lite-Blue Ready Mix Joint Compound; ProForm BRAND Lite Ready Mix Joint Compound; ProForm BRAND Multi-Use Ready Mix Joint Compound)
- b. Ready Mix vinyl base compound formulated for enhanced mold and mildew resistance (ProForm BRAND XP Ready Mix Joint Compound)
- c. Ready Mix vinyl base compound formulated to reduce airborne dust during sanding (ProForm BRAND Lite Ready Mix Joint Compound with Dust-Tech)
- d. Ready Mix vinyl base topping compound for finish coating (ProForm BRAND Topping Compound)
- e. Ready Mix vinyl base compound for embedding joint tape, cornerbeads or other accessories (ProForm BRAND Taping Joint Compound)
- f. Field Mix vinyl base compound (ProForm BRAND Triple-T Compound)

3. Setting Compound:

(Specifier Note: Use ProForm BRAND Quick Set Setting Compound in conjunction with EXP® Tile Backer in non-tile applications.)

- a. Field mixed hardening compound (ProForm BRAND Quick Set Setting Compound; ProForm BRAND Quick Set Lite Setting Compound)
- b. Field mixed hardening compound for fire resistance rated construction and penetrations ProForm BRAND Fire Shield 90)

4. Joint Sealant:

- a. Conform to ASTM C 920
- b. VOC content less than 2 g/L

PART 3 - EXECUTION

(Specifier Note: COORDINATE Preparation and Installation requirements with the desired partition, ceiling or floor assembly.)

3.1 INSTALLATION, GENERAL

- A. Install in accordance with manufacturer recommendations

3.2 INSTALLATION, CEMENT BOARD

- A. Install in accordance with manufacturer recommendations and ANSI A 108.11

3.3 INSTALLATION, ACOUSTICALLY ENHANCED GYPSUM BOARD

- A. Install in accordance with manufacturer recommendations and GA-214

3.4 INSTALLATION, INTERIOR EXTENDED EXPOSURE GYPSUM PANELS

- A. General: Install in accordance with manufacturer recommendations, ASTM C 840 and GA-216

(Specifier Note: EXP Interior Extreme Gypsum Panels are ideally suited for extreme interior applications. These applications include installation of interior gypsum panels prior to the completion of the building envelope; installation of gypsum panels on the interior face of exterior walls; installation adjacent to wet areas; and installation in non-conditioned space. National Gypsum provides a 12 month exposure warranty against deterioration and delamination, when installed as recommended.)

- B. Unenclosed Building Envelope:

- 1. To allow for installation of gypsum panels prior to fully enclosing the building envelope, install interior extended exposure gypsum panels in lieu of gypsum board in accordance with manufacturer recommendations

- C. Interior Face of Exterior Wall:

- 1. To assist in moisture control within exterior building walls, install interior extended exposure gypsum panels in lieu of gypsum board on interior face, in accordance with manufacturer recommendations

- D. Adjacent to Wet Walls:

- 1. To assist in the moisture and mold control on walls adjacent to wet walls or within 8 feet of a plumbing fixture, install interior extended exposure gypsum panels in lieu of gypsum board, as a tile backer or a substrate for other wall finish. **[Apply Level 5 finish in accordance with Gypsum Association GA-214 where panels will be located in critical lighting conditions or will receive a gloss, semi-gloss, or enamel paint finish.]**

- E. Fire-Resistance Rated:

- 1. Install in accordance with manufacturer recommendations, ASTM C 840 and GA-216

3.5 INSTALLATION, TILE BACKER

A. General:

(Specifier Note: Gold Bond® BRAND EXP® Tile Backer has acrylic coated fiberglass facers which provide an integral water barrier, eliminating the need for a separate water barrier. Do not install a vapor retarder directly behind EXP® Tile Backer.)

1. Install in accordance with manufacturer recommendations, ASTM C 840 and GA-216
2. Install with acrylic coated water barrier side facing away from the framing, so that finishes shall be applied to the coated side.
3. Caulk or seal penetrations and abutments to dissimilar materials.

B. Tile Backer Installation for ceilings:

1. Install panels perpendicular to supports spaced a maximum of 12 inches on center for ½ inch thick panels and 16 inches on center for 5/8 inch thick panels.
2. Space fasteners 8 inches on center along all support members. Drive fasteners flush with the panel surface, do not countersink.

C. Tile Backer Installation for countertops:

1. Apply backer over minimum 23/32 inch exterior grade plywood sub-base using a bed of thin set mortar.
2. Fasten using 1 ¼ inch corrosion resistant roofing nails or coarse thread bugle head screws spaced no more than 8 inches on center in both directions. Drive fasteners flush with the panel surface, do not countersink.

D. Tile Backer Installation for walls:

1. Install panels horizontal or vertical to supports spaced a maximum of 16 inches on center without blocking or 24 inches on center with blocking at all joints for ½ inch thick panels and 24 inches on center for 5/8" inch thick panels.
2. Space fasteners 8 inches on center along all support members. Drive fasteners flush with the panel surface, do not countersink.
3. Dry Non-Tile Applications
 - a. Tape joints with fiberglass mesh tape and embed with setting type joint compound.
 - b. Skim the surface with a setting or ready-mix joint compound.

(Specifier Note: Wet non-tile applications have higher than normal humidity conditions such as swimming pools, process facilities, etc.)

4. Wet Non-Tile Applications

- a. Finish walls with a direct applied finish systems, or materials suitable for humid environments.
- b. Seal transitions and abutments to dissimilar materials with flexible joint sealant.

3.6 INSTALLATION, GYPSUM SHEATHING

A. Install in accordance with manufacturer recommendations and **[ASTM C 1280] [GA-253]**

[DISCLAIMER:](#)

National Gypsum Company Guide Specifications have been written as an aid to the professionally qualified specifier and design professional. The use of this information requires the professional judgment and expertise of the qualified specifier and design professional to adapt the information to the specific needs of the building Owner and the project; to coordinate with the design professional's construction document process, and to meet the applicable building codes, regulations and laws. National Gypsum disclaims any warranty, expressed or implied, including the warranty of fitness for a particular purpose of the product for a project.

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