

Gold Bond® BRAND e²XP® Extended Exposure Shaftliner National Gypsum Company Area Separation Fire Wall System

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying extended exposure gypsum shaftliner panels 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.)

*The language provided is not adequate as a complete stand-alone specification section. Recommended section numbers and titles where this information may be included: **Section 09 21 16 - Gypsum Board Assemblies** or **Section 09 29 00 Gypsum Board** or **Section 09 21 16.33 Gypsum Board Area Separation Wall Assemblies**. Language that the specifier may elect to include in each of the 3-Parts has been provided. Article numbering is only for navigating this document and language should be incorporated into the appropriate Article heading in the desired section.*

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

PART 1 - GENERAL

1.1 PERFORMANCE CRITERIA

(Specifier Note: INCLUDE Fire-Resistance Rating statement when shaftliner is to be a component of a rated area separation assembly.)

- A. Wall Assembly Fire-Resistance Rating: 2-Hour, **[WHI 694-0200.6] [UL Assembly U347]**
- B. Wall Assembly STC: **[35] [50] [55] [61] [67]**

1.2 WARRANTY

- A. Manufacturer standard warranty against delamination of facing and degradation of sheet for a period of 12 months from installation of board.

PART 2 - PRODUCTS

2.1 EXTENDED EXPOSURE GYPSUM SHAFTLINER

- A. Product/Manufacturer

(Specifier Note: Maintain brand name 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.)

- 1. Basis of Design: National Gypsum Company; Gold Bond® BRAND e²XP® Extended Exposure Shaftliner

- B. Shaftliner Physical Characteristics

- 1. Core: Type X, gypsum core, with additives to enhance fire-resistance, moisture and mold resistant.
- 2. Facing: Water-resistant glass mat on front, back, and long edges.
- 3. Long Edges: Double Beveled

4. Overall Thickness: 1 inch
5. Complies with requirements of ASTM C 1396 – Standard Specification for Gypsum Board and ASTM C 1658 – Standard Specification for Glass Mat Gypsum Panels

(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.)

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

2.2 STANDARD GYPSUM BOARD

(Specifier Note: Standard Gypsum Board may be used as a component in the UL U347 assembly – COORDINATE the required STC rating and select the appropriate gypsum board products.)

A. Product/Manufacturer

1. Basis of Design: Gold Bond® BRAND Gypsum Board.

B. Panel Physical Characteristics

1. Core: Regular
2. Surface Paper: 100% recycled content paper on front, back and long edges
3. Long Edges: **[Square] [Tapered]**
4. Overall thickness: 1/2
5. Panel complies with requirements of ASTM C 1396 Standard Specification for Gypsum Board.

2.3 FIRE-RESISTANCE RATED GYPSUM BOARD

(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. When using the WHI assembly Type C fire-resistance rated gypsum board must be used.)

A. Product/Manufacturer

1. Basis of Design: National Gypsum Company; Gold Bond® BRAND Fire-Shield C™ Gypsum Board.

B. Panel Physical Characteristics

1. Core: Enhanced fire-resistance rated gypsum core
2. Surface paper: 100% recycled content paper on front, back and long edges
3. Long Edges: **[Square] [Tapered] [Beveled]**
4. Overall thickness: **[1/2 inch]**
5. Panel complies with requirements of ASTM C 1396, Type X

2.4 ACOUSTICALLY ENHANCED GYPSUM BOARD

(Specifier Note: Acoustically Enhanced Gypsum Board may be used as a component in the UL U347 assembly – in lieu of standard gypsum board. COORDINATE the required STC rating and select the appropriate gypsum board products.)

A. Product/Manufacturer

1. Basis of Design: Gold Bond® BRAND SoundBreak™ Gypsum Board.

B. Panel Physical Characteristics

1. Inner layer: Viscoelastic damping polymer
2. Outer layer: Enhanced high density mold-resistant gypsum board
3. Long Edges: Tapered

4. Overall thickness: 5/8 inch

(Specifier Note: Acoustical sealant and firestopping requirements may be specified in other Sections, COORDINATE location of information so that it is not duplicated)

PART 3 - EXECUTION

3.1 INSTALLATION, AREA SEPARATION FIRE WALL SYSTEM

A. General

1. Install in accordance with manufacturer recommendations.

(Specifier Note: EDIT installation requirements dependent on wall construction assembly. INCORPORATE only specification language that is project specific.)

B. Two-Hour Area Separation to meet WHI 694-0200.6

(Specifier Note: Assembly will achieve an STC of 35. COORDINATE spacing of framing, with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.

1. Install 2 inch floor and ceiling runners with 2 inch steel H-studs
2. Install 2 layers of 1 inch **[extended exposure] [E²XP]** Shaftliner between H-studs
3. Cover studs with 1/2 inch fire-resistance rated **[Type C] [Fire-Shield CTM]** 6 inches wide on both sides

C. Two-Hour Area Separation to meet UL assembly U347

1. Install 2 inch floor and ceiling runners with 2 inch steel H-studs
2. Install 2 layers of 1 inch **[extended exposure] [E²XP]** Shaftliner between H-studs
3. Install 2 x 4 wood studs on one side of assembly; maintain minimum 3/4 inch air space between steel components and wood framing.

(Specifier Note: Without mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 50, with installation of 3-1/2 inch mineral wool or glass fiber insulation an STC rating of 55 can be achieved. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

4. **[Install 1-1/2 inch mineral wool or glass fiber in cavity.]**
5. Apply minimum 1/2 inch standard gypsum board to face of wood studs.

D. Two-Hour Area Separation to meet UL assembly U347

1. Install 2 inch floor and ceiling runners with 2 inch steel H-studs
2. Install 2 layers of 1 inch **[extended exposure] [E²XP]** Shaftliner between H-studs
3. Install 2 x 4 wood studs on each side of shaftliner assembly, maintain minimum 3/4 inch air space between steel components and wood framing.

(Specifier Note: Without mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 50, with installation of 3-1/2 inch mineral wool or glass fiber insulation on one side an STC rating of 55 can be achieved, and if installed on both sides an STC rating of 61 can be achieved, when acoustically enhanced gypsum board NGC SoundBreak, an STC rating of 67 can be achieved. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

4. **[Install 3-1/2 inch mineral wool or glass fiber in cavity on [one] [both] sides.]**

5. Apply **[5/8 inch [acoustically enhanced] [SoundBreak]] [1/2 inch standard]** gypsum board to face of wood studs.

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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Gold Bond® BRAND e²XP® Extended Exposure Shaftliner

National Gypsum Company

Gypsum Board Shaft Wall Assemblies

(Specifier Note: The purpose of this guide specification language is to assist the specifier in correctly specifying extended exposure gypsum shaftliner panels 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.)

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PART 1 - GENERAL

1.1 PERFORMANCE CRITERIA

(Specifier Note: INCLUDE Fire-Resistance Rating statement when shaftliner is to be a component of a rated assembly. Extended Exposure Shaftliner can be utilized in other assemblies than those listed, Contact National Gypsum for assistance with additional assemblies.)

- A. Wall Assembly Fire-Resistance Rating: **[1-Hour, UL Assembly U499] [2-Hour, UL Assembly U497] [U498]] [4-Hour, UL Assembly V451]**
- B. Wall Assembly STC: **[37] [40] [42] [45] [47] [50] [51]**

1.2 WARRANTY

- A. Manufacturer standard warranty against delamination of facing and degradation of sheet for a period of 12 months from installation of board.

PART 2 - PRODUCTS

2.1 EXTENDED EXPOSURE GYPSUM SHAFTLINER

A. Product/Manufacturer

(Specifier Note: Maintain brand name 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.)

- 1. Basis of Design: National Gypsum Company; Gold Bond® BRAND e²XP® Extended Exposure Shaftliner

B. Shaftliner Physical Characteristics

- 1. Core: Type X, gypsum core, with additives to enhance fire-resistance, moisture and mold resistant.
- 2. Facing: Water-resistant glass mat on front, back, and long edges.
- 3. Long Edges: Double Beveled

4. Overall Thickness: 1 inch
5. Complies with requirements of ASTM C 1396 – Standard Specification for Gypsum Board and ASTM C 1658 – Standard Specification for Glass Mat Gypsum Panels

(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.)

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

2.2 FIRE-RESISTANCE RATED GYPSUM BOARD

A. Product/Manufacturer

(Specifier Note: Maintain brand name 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.)

1. Basis of Design: National Gypsum Company; Gold Bond® BRAND Fire-Shield® Gypsum Board.
2. Basis of Design: National Gypsum Company; Gold Bond® BRAND Fire-Shield C™ Gypsum Board.

B. Type X, Panel Physical Characteristics

1. Core: Fire-resistant rated gypsum core
2. Surface paper: 100% recycled content paper on front, back and long edges
3. Long Edges: **[Square] [Tapered] [Beveled]**
4. Overall thickness: 5/8 inch
5. Panel complies with requirements of ASTM C 1396, Type X

C. Type C, Panel Physical Characteristics

(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.)

1. Core: Enhanced fire-resistance rated gypsum core
2. Surface paper: 100% recycled content paper on front, back and long edges
3. Long Edges: **[Square] [Tapered] [Beveled]**
4. Overall thickness: **[5/8 inch] [1/2 inch]**
5. Panel complies with requirements of ASTM C 1396, Type X

(Specifier Note: Acoustical sealant and firestopping requirements may be specified in other Sections, COORDINATE location of information so that it is not duplicated)

PART 3 - EXECUTION

3.1 INSTALLATION, FIRE RESISTANCE RATED SHAFTWALL ASSEMBLIES

A. General

1. Install in accordance with manufacturer recommendations.

(Specifier Note: EDIT installation requirements dependent on wall construction assembly. INCORPORATE only specification language that is project specific.)

B. One-Hour Fire-Resistance Rated Shaftwall Assembly to meet UL U499

1. Install 2-½ inch metal **[I-Studs] [C-H Studs] [C-T Studs]** at 24 inches o.c.
2. Install 1 inch **[extended exposure] [E²XP]** shaftliner between studs.

(Specifier Note: Without mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 37, with installation of 1-1/2 inch mineral wool or glass fiber insulation an STC rating of 42 can be achieved, studs must be installed at 24 inches on center with 1-1/2 inch glass fiber insulation in the stud cavity. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

3. **[Install 1-1/2 inch mineral wool or glass fiber in cavity.]**
4. Apply 5/8 inch **[fire-resistance rated [Type X] [Type C]] [Fire-Shield®] [Fire-Shield C™]** gypsum board horizontally or vertically to studs on side opposite Shaftliner Panel.

C. Two-Hour Fire-Resistance Rated Shaftwall Assembly to meet UL U497

1. Install 2-½ inch metal **[I-Studs] [C-H Studs] [C-T Studs]** at 24 inches o.c.
2. Install 1 inch **[extended exposure] [E²XP]** shaftliner between studs.

(Specifier Note: Without mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 40, with installation of 1-1/2 inch mineral wool or glass fiber insulation an STC rating of 47 can be achieved, studs must be installed at 24 inches on center with 1-1/2 inch glass fiber insulation in the stud cavity. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

3. **[Install 1-1/2 inch mineral wool or glass fiber in cavity.]**

(Specifier Note: To enhance the STC of the wall, resilient channels can be installed perpendicular to the stud – along with installation of mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 51, studs must be installed at 24 inches on center with 1-1/2 inch glass fiber insulation in the stud cavity. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

4. **[Install resilient furring channels horizontally to studs on side opposite Shaftliner Panel, space channels a 24 inches o.c. maximum.]**
5. Apply **[5/8] [1/2]** inch **[fire-resistance rated [Type X] [Type C]] [Fire-Shield®] [Fire-Shield C™]** gypsum board horizontally or vertically to studs on side opposite Shaftliner Panel.
6. Apply second layer of 5/8 inch fire-resistant **[fire-resistance rated [Type X] [Type C]] [Fire-Shield®] [Fire-Shield C™]** gypsum board over initial layer, staggering joints.

D. Two-Hour Fire-Resistance Rated Shaftwall Assembly to meet UL U498

1. Install 2-½ inch metal **[I-Studs] [C-H Studs] [C-T Studs]** at 24 inches o.c.
2. Install 1 inch **[extended exposure] [E²XP]** shaftliner between studs.

(Specifier Note: Without mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 40, with installation of 1-1/2 inch mineral wool or glass fiber insulation an STC rating of 45 can be achieved, studs must be installed at 24 inches on center with 1-1/2 inch glass fiber insulation in the stud cavity. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

3. **[Install 1-1/2 inch mineral wool or glass fiber in cavity.]**

(Specifier Note: To enhance the STC of the wall, resilient channels can be installed perpendicular to the stud – along with installation of mineral wool or glass fiber insulation in cavity – assembly will achieve an STC of 50, studs must be installed at 24 inches on center with 1-1/2 inch glass fiber insulation in the stud cavity. COORDINATE spacing of framing, and inclusion of glass-fiber insulation with the related drawings and specification sections. – Dependent on the application – verify code requirements of STC ratings at various conditions.)

4. **[Apply resilient furring channels horizontally to studs on side opposite Shaftliner Panel, space channels a 24 inches o.c. maximum.]**
5. Apply **[5/8] [1/2]** inch **[fire-resistance rated [Type X] [Type C]] [Fire-Shield®] [Fire-Shield C™]** gypsum board horizontally or vertically to studs on side opposite Shaftliner Panel.
6. Apply **[5/8] [1/2]** inch **[fire-resistance rated [Type X] [Type C]] [Fire-Shield®] [Fire-Shield C™]** gypsum board over outside face of shaftliner.

E. Four-Hour Fire-Resistance Rated Shaftwall Assembly to meet UL V451

1. Install 4 inch metal **[I-Studs] [C-H Studs] [C-T Studs]** at 24 inches o.c.
2. Install 1 inch **[extended exposure] [e2XP]** Shaftliner between studs.
3. Apply three layers **[5/8]** inch **[fire-resistance rated Type C] [Fire-Shield C™]** gypsum board vertically to studs on side opposite Shaftliner Panel.
4. Install resilient furring channels horizontally to over third layer of panel, space channels a 16 inches o.c. maximum.
5. Apply fourth and fifth layer of 5/8 inch fire-resistant **[fire-resistance rated Type C]] [Fire-Shield C™]** vertically to furring channels.

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