

CertainTeed

# ProRoc<sup>®</sup> BRAND

Shaftliner for Gypsum Shaftwall™ Systems

1, 2 & 3 Hour Fire Resistance Ratings



**CertainTeed** 

*Quality made certain. Satisfaction guaranteed.™*



# ProRoc® Shaftwall™ Systems

The walls of elevator shafts and stairwells are a vital safety link in multi-story buildings. These walls are the main line of defense against fire entering the cavities behind them and spreading rapidly from floor to floor.

Gypsum Shaftwall™ Systems have replaced traditional masonry for interior vertical enclosures including mechanical enclosures, stairwells, elevator enclosures, and other mechanical chases. Some inherent advantages of gypsum shaftwall systems are: light weight construction, thinner walls, ease and speed of installation and clean up, and cost effective construction.

ProRoc® Shaftwall™ Systems provide one, two or three hour fire resistance ratings in non-load bearing configurations. The systems are designed to withstand the intermittent surges of air pressure caused by fast moving elevator cabs. These systems utilize either an I-Stud or a C-T Stud and J-Track to support layers of 1" ProRoc® Shaftliner Type X and either 1/2" ProRoc® Type C or 5/8" ProRoc® Type X gypsum boards.

EITHER I OR C-T STUDS MAY BE USED IN CONJUNCTION WITH ProRoc® Shaftwall™ Systems. All of the components are non-combustible.

### Approvals and Recognition

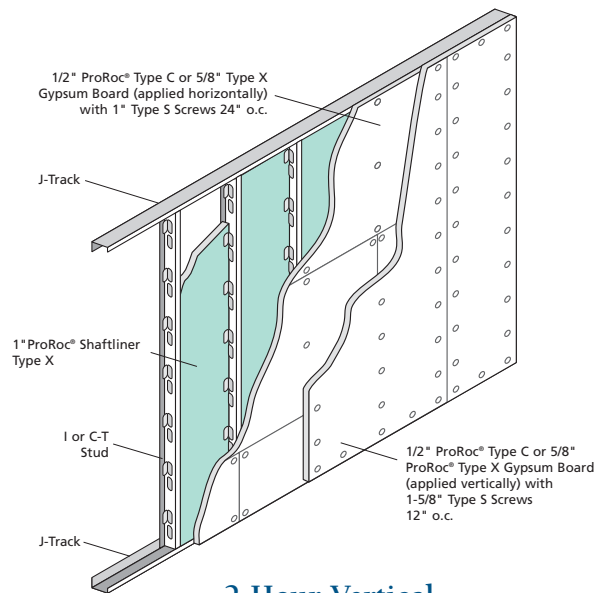
ProRoc® Shaftwall™ Systems have been tested and evaluated by Underwriters Laboratories Inc. and have been assigned UL Design U417. Additionally, the testing has been evaluated by ICBO Evaluation Service and is recognized in CertainTeed's (formerly BPB's) ICBO Evaluation Report ER-4924 using SCAFCO Corporation I-Studs. ProRoc® Shaftwall™ Systems have been fire tested with more than one steel manufacturer and stud configuration. See ICBO ER-3579 Phillips Manufacturing Co. I-Studs and ICC ES Legacy Report NER-506 Dietrich Industries C-T Studs.

ProRoc® Shaftwall™ Systems are recognized and described in the Gypsum Association Fire Resistance Design Manual - GA-600.



## Walls can be erected from one side, eliminating the need to build extensive scaffolding.

From a cost standpoint, ProRoc® Shaftliner assemblies save money in several ways. With less weight per square foot than other shaft enclosures, structural framing requirements are reduced; as is the need for heavily reinforced footings. The 2' wide ProRoc® Shaftliner boards slide quickly into the I-Stud or C-T Stud and automatically provide 24" o.c. spacing. Walls can be erected from one side, eliminating the need to build extensive scaffolding. No finishing is required on the shaft side of the partition.



### 2 Hour Vertical Shaftwall™ System

1. All construction shall comply with local building codes.
2. Only those components specified shall be used when constructing any fire or sound rated system. Substitutions may adversely affect performance capabilities.
3. Unless otherwise specified in the system design, face layer joints of 1/2" ProRoc® Type C, 5/8" ProRoc® Type X or 5/8" ProRoc® Type C shall be taped and finished with joint compound as described in "Surface Preparation" section.

### UL Design U417 ICBO ER-4924

#### ICBO ER-3579 and NER-506

For further technical information regarding sound control and fire resistance refer to the following reports: Gypsum Association Fire Resistance Design Manual - GA-600 (GA WP 7008, WP 7020, WP 7056, WP 7057, WP 7078, WP 7082, WP 7083, WP 7098, WP 7099)

# ProRoc® Shaftwall™ Specifications

## COMPONENT SPECIFICATIONS

	Type C	Type C	Type X	Shaftliner	Steel Framing		
ASTM	C 1396/C 36	C 1396/C 36	C 1396/C 36	C 442		C 645	
Thickness	1/2" (12.7 mm)	5/8" (15.9 mm)	5/8" (15.9 mm)	1" (25.4 mm)	25 Ga**	20 Ga**	19 Ga**
Width/Size*	4' (1219 mm)	4' (1219 mm)	4' (1219 mm)	2' (609.5 mm)	2-1/2", 4"	2-1/2", 4", 6"	4", 6"
Lengths*	8', 9', 10', 12'	8', 12'	8', 9', 10', 12'	8', 12'	* 2-1/2" = 63.5 mm 4" = 102 mm 6" = 152 mm 8" = 2438 mm 9" = 2743 mm 10" = 3048 mm 12" = 3657 mm		
Approx. Weight	1.8 psf (8.8 kg/m <sup>2</sup> )	2.3 psf (11.2 kg/m <sup>2</sup> )	2.1 psf (10.2 kg/m <sup>2</sup> )	4.1 psf (20 kg/m <sup>2</sup> )	** 25 Ga: .0188 = 0.53 mm 20 Ga: .0329 = 0.91 mm 19 Ga: .0400 = 1.20 mm		
Edges	Tapered	Tapered	Tapered	Beveled			
Paper	Manila Face Gray Back	Manila Face Gray Back	Manila Face Gray Back	Green Face Green Back			

**CertainTeed** certifies that the gypsum board products described herein meet or exceed listed ASTM standard specifications. All products are not available in all geographic areas. Consult local building codes for regulations in your area. For further information, consult a **CertainTeed** sales representative.  
Metric conversion: 1 inch = 25.4 mm; 1 foot = 304.8 mm

## SURFACE BURNING

	Type C	Type X	Shaftliner	
Flame Spread	0 - 25 (Class A)	0 - 25 (Class A)	0 - 25 (Class A)	When tested in accordance with ASTM E 84.
Smoke Developed	0	0	0	

## Technical References

For additional information on application and finishing consult:

- ICC International Codes
- UL Fire Resistance Directory - UL Design U417
- Gypsum Association Publications GA-216 and GA-600
- ASTM C 36, C 442, C 475, C 514, C 645, C 754, C 840, C 1002, C 1047, C 1396, E 119
- CertainTeed's Gypsum Board is recognized for use in ICBO Evaluation Service Report ER-4924
- Also see ICC ES Reports ESR-1046 and ESR-1338.
- Also see ICBO ER-3579 Phillips Manufacturing Company I-Studs and ICC ES Legacy Report NER-506 Dietrich Industries Inc. C-T Studs

## Handling and Storage

ProRoc® gypsum boards should be stacked flat on a smooth, level surface, not directly on the ground. When spacers are used, position them closely enough together to minimize warpage. Care should be taken to prevent damage to edges and corners. Always keep ProRoc® gypsum board dry prior to installation. CertainTeed assumes no responsibility for consequential damages that may result from the presence of standing water or where moisture is in direct contact with ProRoc® Shaftwall™ System components.

## WORKING

### Cutting

*The score and snap method is a fast and efficient way to cut ProRoc® gypsum board.*

### Steps:

1. On the face side, position a straight edge along the line of cut.
2. Score sheets with a knife or other suitable tool.
3. With a quick, firm motion, snap back away from the face.
4. The back paper can either be cut with a knife or separated by snapping the piece in the opposite direction.
5. Smooth all cut ends and edges to ensure tight joints.

ProRoc® gypsum boards can also be cut with a saw. For information on avoiding dust inhalation, refer to the Material Safety Data Sheet available where **CertainTeed** products are sold. Safety glasses should always be worn when using power tools. To make cutouts, score around the perimeter on the face and back and tap out the waste piece from the face side. Cutouts can also be made with a drywall saw.

### Installation

#### Steel Framing and Installation of ProRoc® Shaftliner Type X boards.

1. Attach J-Track to walls. Ensure that all wall sections are plumb and properly aligned.
2. Install J-Track along the ceiling line and vertically at columns and abutting partitions, positioning the long legs closest to the shaft. Secure each piece with the appropriate power driven fasteners spaced a maximum 24" o.c.
3. Attach J-Track to the floor with fasteners spaced at 24" o.c.
4. Install ProRoc® Shaftliner Type X boards vertically. Cut boards a maximum of 1" less than floor to ceiling height. The leading edge of the first board must be attached to the long leg of the vertical J-Track with 1-5/8" Type S screws spaced 24" o.c. Secure the top and bottom edges using the same fasteners and spacing.
5. Friction fit an I or C-T Stud into the top and bottom tracks and slide it snugly against the ProRoc® Shaftliner boards. Make sure the edge of the board is in full contact with the center web of the stud and covered by all of the tabs.
6. Place the next ProRoc® Shaftliner board between the tabs and flange on the opposite side of the I or C-T Stud.
7. Install subsequent ProRoc® Shaftliner boards and I or C-T Studs in the same manner. Check periodically to ensure they are plumb.
8. At the end of a partition run, cut the last ProRoc® Shaftliner board slightly narrower and shorter than the opening to facilitate installation.
9. For walls exceeding 12' in height, ProRoc® Shaftliner board end joints should fall alternately in the upper and lower 1/3 of the partition. Joints may be butted together or use an I or C-T Stud placed horizontally between boards to secure each joint.

# WITH THE PRODUCT

10. Frame all cut openings in the shaft side with J-Track, providing adequate structural support for openings over 48".
11. Elevator door frames must be tied to shaftwall enclosures; however, they must remain independently supported by the building frame. Attach ProRoc® Shaftwall™ System to elevator door frame jamb and anchor clips with pan head screws. The J-Track 3" leg is used at the intersection of the elevator door frame and shaftwall system.
12. Where required, use an acoustical sealant to caulk around the perimeter of wall sections, door frames, call boxes and any other openings that may allow air passage.

## 1-Hour-Rated System: Finished One Side

1. Apply a single layer of 5/8" ProRoc® Type X gypsum board vertically with 1" Type S screws.
2. Holding the gypsum board firmly against the framing, begin fastening in the center of each sheet and move outward toward ends and edges.
3. Space screws at 12" o.c. in the field of the board and 8" o.c. around the perimeter.
4. Set fastener heads slightly below the surface without breaking the face paper or damaging the gypsum core.
5. Install sheets with all edges supported by framing members.

## 2-Hour-Rated System: Finished One Side

1. Install a base layer of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X board as described for 1-Hour Rated Systems with the exception of fastener positioning of 1" Type S buglehead screws at 24" o.c.
2. Apply a face layer of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X vertically over the base layer with 1-5/8" Type S screws spaced at 12" o.c.
3. All joints in the base layer must be staggered with respect to those in the face layer.

## 3-Hour-Rated System: Finished One Side

1. Follow the preceding framing details using I or C-T Studs and J-Track.
2. Apply ProRoc® Shaftliner Type X within stud configuration, followed by attachment of 5/8" ProRoc® Type C gypsum wallboard on the open-stud-face vertically, parallel to framing, with 1" No. 6 Type S screws.
3. Apply two additional layers of 5/8" ProRoc® Type C on the open-stud-face vertically or horizontally over the base layer. Secure with 1-5/8" and 2-1/4" No. 6 Type S screws respectively, offset 6" from layer below.

## 2-Hour-Rated System: Finished Two Sides

1. Follow the preceding framing details using I or C-T Studs and J-Track.
2. Apply ProRoc® Shaftliner Type X, followed by the attachment of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X gypsum wallboard in a single facing layer on each side of the studs vertically, parallel to framing, with 1" No. 6 Type S screws 12" on center.

## 3-Hour-Rated System: Finished Two Sides

1. Follow the preceding framing details using I or C-T Studs and J-Track.

2. Apply ProRoc® Shaftliner Type X, followed by the attachment of 5/8" ProRoc® Type C gypsum board in a single facing layer on each side of the studs vertically, parallel to framing, with 1" No. 6 Type S screws.
3. Apply an additional layer of 5/8" ProRoc® Type C gypsum board on the open-stud-face vertically or horizontally over the base layer. Secure with 1-5/8" No. 6 Type S screws.

## 2-Hour-Rated System: Sound Control (STC) Rating of 50

A two-hour-rated shaftwall partition can be configured to achieve a minimum STC rating of 50 with the following system.

1. Fill wall cavity with 1-1/2" fiberglass or mineral fiber insulation.
2. Install resilient furring channels, 1/2" deep minimum No. 25 gage/0.0188" thick, on the face side horizontally to I or C-T Studs at 24" o.c.
3. Secure channels to each stud with 3/8" Type S panhead screws.
4. Apply a double layer of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X. Attach the base layer to the channels using 1" Type S buglehead drywall screws spaced 24" o.c. along the edges and in the field of the board with the first screw 3" from board end. Attach the face layer to the channels using 1-5/8" No. 6 Type S buglehead screws spaced 12" o.c. along the edges and in the field with the first screw 6" from board end.
5. Apply caulk under the top and bottom tracks and around the exterior face perimeters of each layer of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X.

## 1 and 2-Hour-Rated Systems: Corridor, Ceiling or Stair Soffits

Partition systems that provide fire-resistive protection on corridor ceilings or on the underside of stairs are constructed using I-Stud framing as described in preceding sections for one and two-hour rated systems, installed in a horizontal orientation. I-Studs are supported by J-Tracks that are attached to existing vertical wall framing members using 1" Type S screws spaced a maximum of 24" o.c. I-Studs are attached at each end to the J-Track using two 1/2" No. 6 Type S-12 panhead screws.

## 2-Hour-Rated System: Horizontal Membrane and Duct Protection

Install the J-Track and I-Stud system for two hour construction as described in preceding sections in a horizontal orientation using two layers of 1/2" ProRoc® Type C gypsum wallboard. The first layer is installed at right angles to the I-Studs and the second layer is installed parallel to the I-Studs. An additional layer of 1/2" ProRoc® Type C gypsum wallboard is progressively installed on top of the ProRoc® Shaftliner Type X. Attach by using either 1/2" beads of joint compound at 12" o.c. or 1-1/2" No. 6 Type S screws at 12" o.c.

## Surface Preparation of Finished Sides:

No finishing is required on the shaft side of partitions. Joints, corners and fastener heads on the opposite face side shall be finished in

accordance with ASTM C 840, the GA-216, the Fire Resistance Design Manual GA-600 and ProFin™ Joint Compound manufacturer's instructions. Joint Compound shall comply with ASTM C 475.

1. No surface treatment shall be done until the interior temperature has been maintained at a minimum of 50°F (21°C) for at least 48 hours prior to application of compounds and until all materials have completely dried. Adequate continuous ventilation must also be provided.
2. Fill and level joints with joint compound.
3. Embed tape into the wet compound and allow to dry. For inside corners, crease the tape and work it into the joint.
4. Apply a second coat of compound across the joint and feather to approximately 4" on each side.
5. Apply a third coat and feather to approximately 6" on each side.
6. Allow each coat to dry before proceeding.
7. Attach corner bead to outside corners and apply three coats of joint compound. Feather out each coat as described in steps 4-6.
8. Spot cover all fastener heads with three coats of joint compound applied in different directions.
9. Lightly sand the last coat of all treated areas, taking care not to roughen the surrounding gypsum board paper. Smoothing can also be accomplished with a damp sponge.

## Finishing:

1/2" ProRoc® Type C or 5/8" ProRoc® Type X board can be finished with paint, texture or wallpaper. High quality primer/sealer must be used prior to any type of final decoration. For high gloss paint and severe lighting conditions, a thin skim coat of joint compound should be applied across the entire surface (Level 5 Finish). This will help minimize the irregularities and porosity differences between the materials. Refer to GA-214, GA-216, and ASTM C 840 for additional finishing instructions. Finishing is not required on shaft side of wall system.

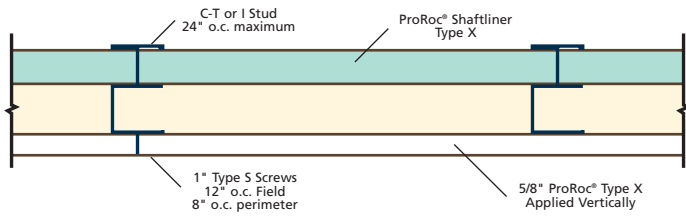
## Limitations

- ProRoc® Shaftwall Systems are for non-load bearing partitions only.
- ProRoc® gypsum board must not be used in areas that are continuously or repeatedly exposed to excessive moisture or dampness.
- ProRoc® Shaftwall™ Systems shall not be exposed to sustained temperatures exceeding 125°F (52°C).
- ProRoc® gypsum board should not come in direct contact with concrete, masonry or other surfaces that have a high moisture content.
- ProRoc® Shaftwall™ Systems are not designed to serve as an unlined air supply duct. Where gypsum board is used in air handling systems, the board surface temperature shall be maintained above the air stream dew point temperature but not higher than 125°F (52°C). Caulk to seal perimeters and penetrations to minimize air noises and dust associated with air movement.

# Vertical Systems

## 1, 2, and 3 hour Fire Resistance Rating

### FIRE RATED SYSTEM DESIGNS FINISHED ONE SIDE



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. A single layer of 5/8" ProRoc® Type X gypsum board is applied vertically, parallel to framing, on open-stud-face side with 1" No. 6 Type S screws spaced 12" on center in the field and 8" on center along the perimeter. Exposed joints and screwheads are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

## 1 HR

VERTICAL SHAFTWALL SYSTEM  
GA FILE NO. WP 7008, WP 7020

FINISHED ONE SIDE

#### FIRE TEST

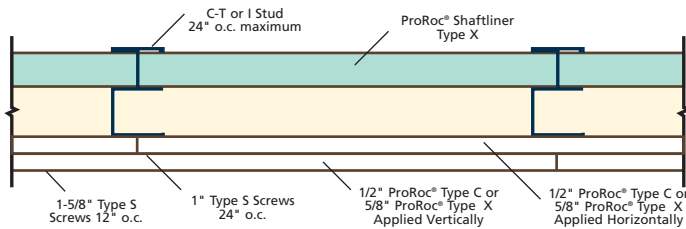
UL DESIGN U417  
SYSTEMS E & F  
WHI 651- 0306.1 1989

#### THICKNESS\*

3-1/8"  
(80 mm)

#### APPROX. WT.

6-1/2 #/sf  
(32 kg/m<sup>2</sup>)



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. Two layers of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X gypsum board are applied to one side, with the base layer applied horizontally to the open-stud-face of framing studs with 1" Type S buglehead screws spaced 24" o.c. The second layer is placed vertically over the base layer and fastened using 1-5/8" No. 6 Type S screws spaced 12" on center. Exposed joints and screwheads are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

## 2 HR

VERTICAL SHAFTWALL SYSTEM  
GA FILE NO. WP 7056,  
WP 7078, WP 7082, WP 7098

FINISHED ONE SIDE

#### FIRE TEST

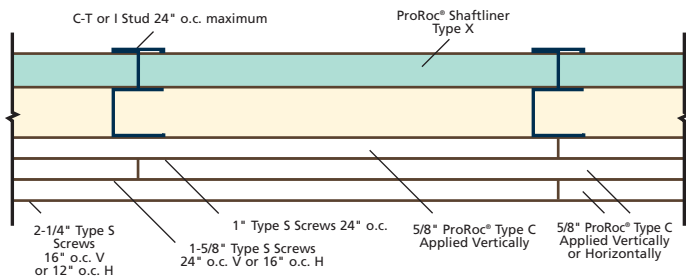
UL DESIGN U417  
SYSTEMS A & C  
WHI 651- 0306.4 1989

#### THICKNESS\*

3-3/4"  
(95 mm)

#### APPROX. WT.

8-1/2 #/sf  
(42 kg/m<sup>2</sup>)



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. Three layers of 5/8" ProRoc® Type C gypsum board are installed on the open-stud-face with the base layer installed vertically with 1" No. 6 Type S screws spaced 24" o.c. Remaining layers applied horizontally or vertically; middle layer with 1-5/8" and face with 2-1/4" No. 6 Type S screws. Screws offset 6" from layer below. Exposed joints are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

## 3 HR

VERTICAL  
SHAFTWALL SYSTEM

FINISHED ONE SIDE

#### FIRE TEST

UL DESIGN U417  
SYSTEMS G & H

#### THICKNESS\*

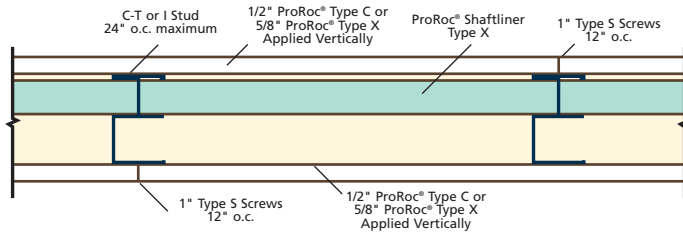
4-3/8"  
(111 mm)

#### APPROX. WT.

11 #/sf  
(54 kg/m<sup>2</sup>)

\*Diagrams shown with 2-1/2" stud configurations. System thickness varies according to stud size application.

## FIRE RATED SYSTEM DESIGNS FINISHED TWO SIDES



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. A single layer of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X gypsum board is applied vertically on both sides, parallel to framing, with 1" No. 6 Type S screws spaced 12" o.c. Joints are staggered or offset between succeeding gypsum board layers. Exposed joints and screwheads are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

### 2 HR

VERTICAL SHAFTWALL SYSTEM  
GA FILE NO. WP 7057,  
WP 7083, WP 7099

FINISHED TWO SIDES

**FIRE TEST**

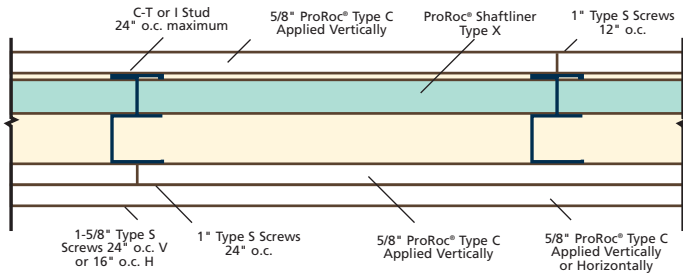
UL DESIGN U417  
SYSTEMS B & D  
WHI 651- 0306.4 1989

**THICKNESS\***

3-3/4"  
(95 mm)

**APPROX. WT.**

8-1/2 #/sf  
(42 kg/m<sup>2</sup>)



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. A single layer of 5/8" ProRoc® Type C gypsum board is progressively installed on top of ProRoc® Shaftliner. Two layers of 5/8" ProRoc® Type C gypsum board are installed on the open-stud-face. Base layer is installed vertically with 1" No. 6 Type S screws spaced 24" o.c. Remaining layer is applied horizontally or vertically with 1-5/8" No. 6 Type S screws. Screws offset 6" from layer below. Exposed joints are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

### 3 HR

VERTICAL  
SHAFTWALL SYSTEM  
FINISHED TWO SIDES

**FIRE TEST**

UL DESIGN U417  
SYSTEMS I & J

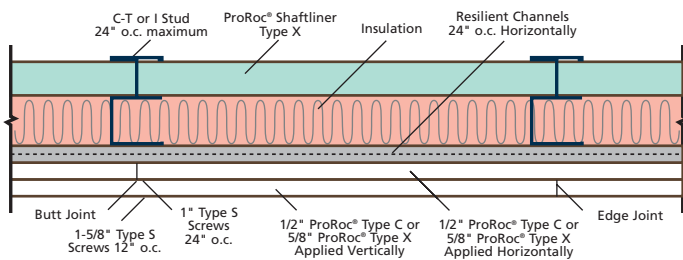
**THICKNESS\***

4-3/8"  
(111 mm)

**APPROX. WT.**

11 #/sf  
(54 kg/m<sup>2</sup>)

## SOUND CONTROL SYSTEM FINISHED ONE SIDE



A two-hour-rated finished-one-side construction, the base and face layers of 1/2" ProRoc® Type C or 5/8" ProRoc® Type X gypsum board are applied over 25 gage resilient furring channels installed horizontally at 24" o.c. fastened with 3/8" Type S panhead screws. The cavity of the partition is filled with fiberglass or mineral fiber insulation. Caulking is applied under top and bottom tracks and around both face perimeters. Exposed joints are to be finished with a joint-tape system unless otherwise specified.  
(Non-Load Bearing)

### 2 HR

VERTICAL SHAFTWALL SYSTEM  
SOUND CONTROL STC 50 WP 7056

FINISHED ONE SIDE

**FIRE TEST**

WHI 651- 0306.1 1989  
SOUND TEST  
RAL 437362 1976

**THICKNESS\***

4-1/4"  
(108 mm)

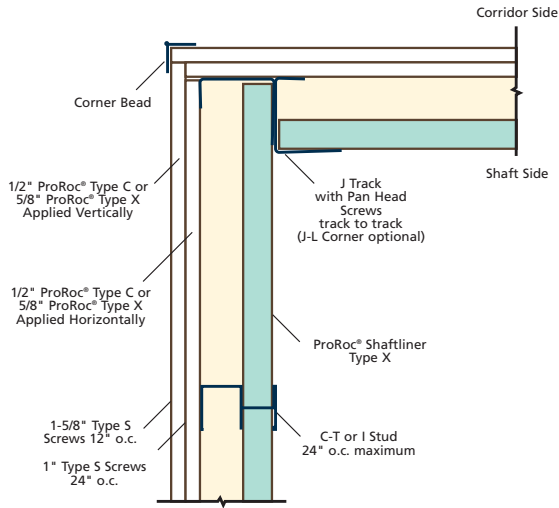
**APPROX. WT.**

9 #/sf  
(44 kg/m<sup>2</sup>)

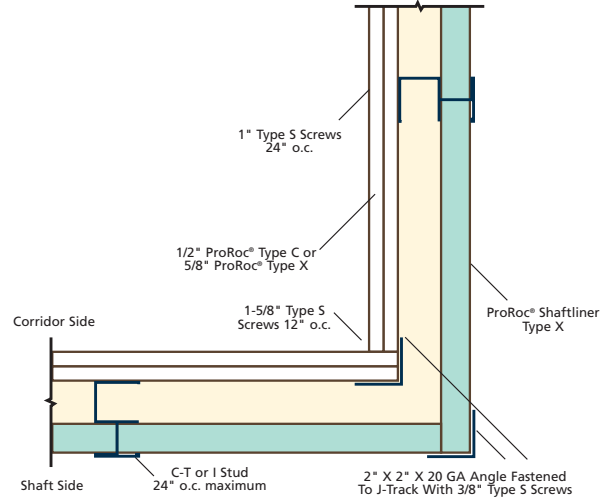
\*Diagrams shown with 2-1/2" stud configurations. System thickness varies according to stud size application.

# Vertical Selector Details

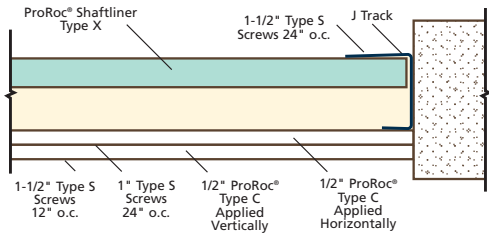
OUTSIDE CORNER DETAIL



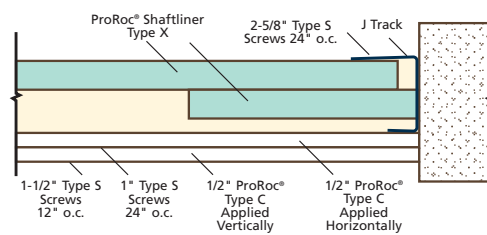
INSIDE CORNER DETAIL



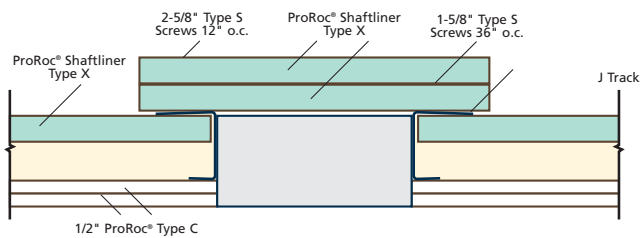
TYPICAL START/END OF WALL DETAIL



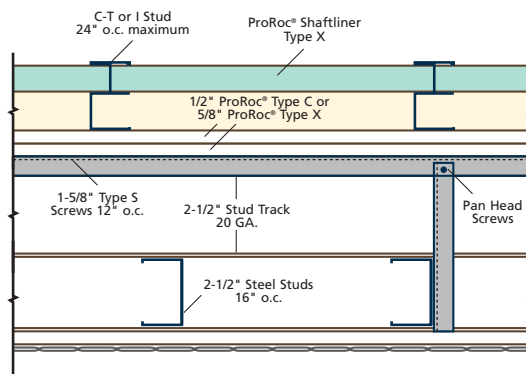
ALTERNATE END OF WALL SECTION DETAIL



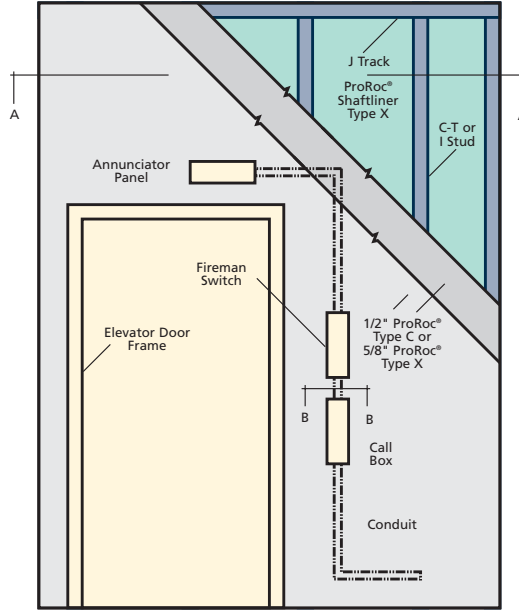
MAIL CHUTE DETAIL



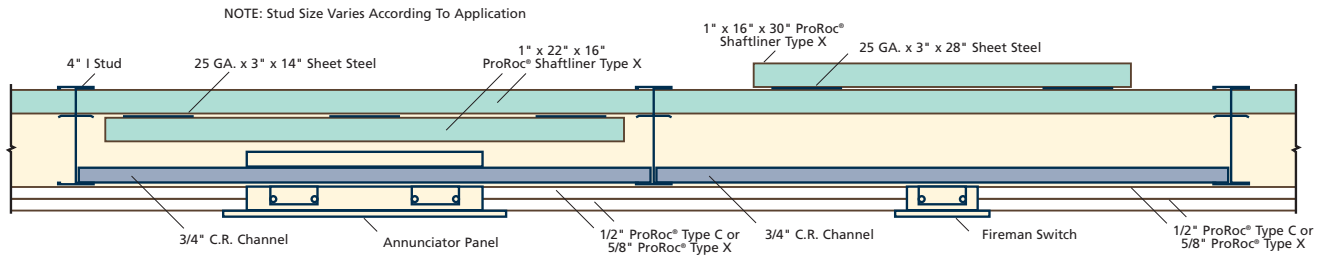
CHASE WALL



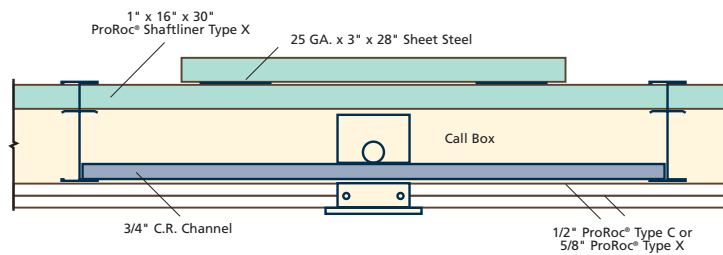
## SHAFTWALL ELEVATOR ELECTRICAL CONTROL LAYOUT



### SHAFTWALL FIREMAN SWITCH AND ANNUNCIATOR PANEL (Section A-A)

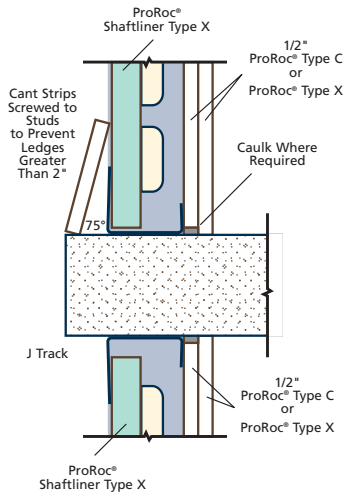


### SHAFTWALL CALL BOX (Section B-B)

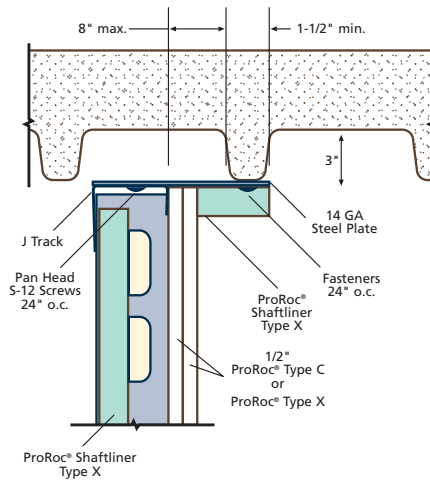


# Section Details

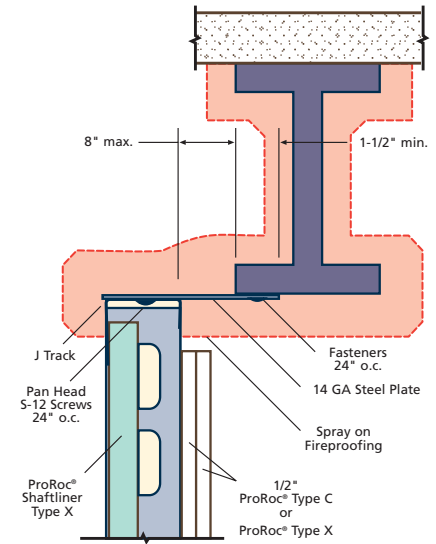
SHAFT CANTS DETAIL



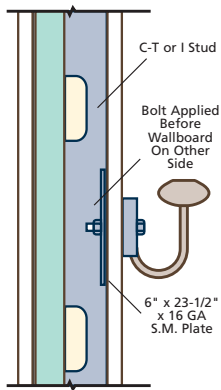
STUD CAVITY WALL



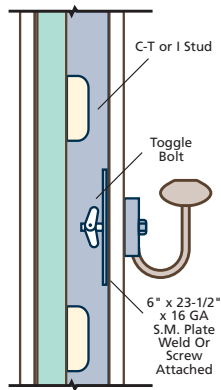
SHAFTWALL OFFSET FROM BEAM



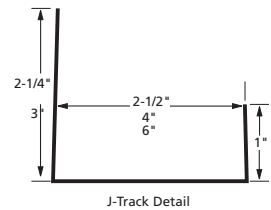
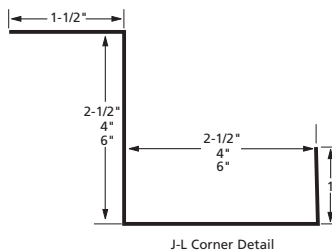
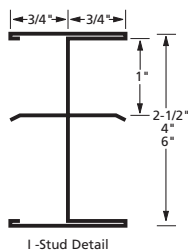
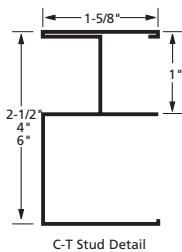
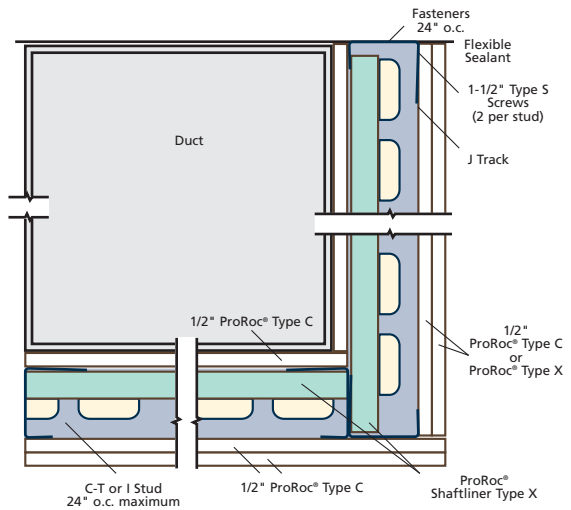
HAND RAIL SUPPORT (BOLT) DETAIL



HAND RAIL SUPPORT (TOGGLE) DETAIL



TWO HOUR HORIZONTAL DUCT PROTECTION

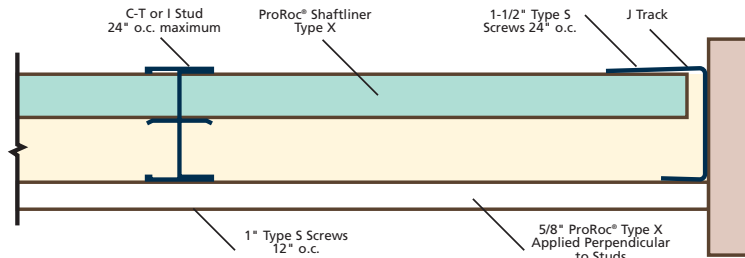


Either I or C-T Studs May Be Used In Conjunction With ProRoc® Shaftwall™ Systems.

# Horizontal Systems

## 1 and 2 hour Fire Resistance Rating

### FIRE RATED SYSTEM DESIGNS



This system is installed in a horizontal orientation. ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" C-T or I-Studs. A single layer of 5/8" ProRoc® Type X gypsum board is applied at right angles to the C-T or I-Studs, with 1" No. 6 Type S screws spaced 12" o.c. (Non-Load Bearing)

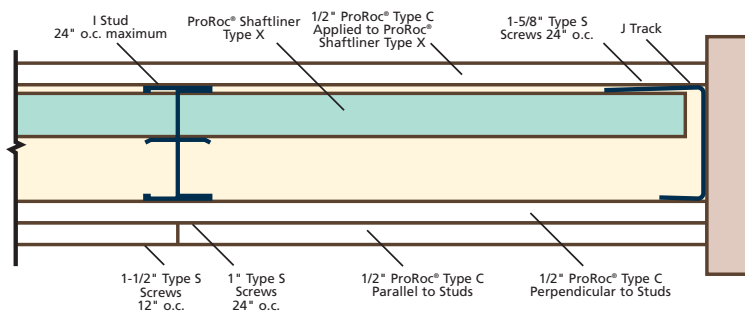
## 1 HR

HORIZONTAL  
CEILING SYSTEM

**FIRE TEST**  
WHI 651- 0306.1  
1989

**THICKNESS\***  
3-1/8"  
(80 mm)

**APPROX. WT.**  
6-1/2 #/sf  
(32 kg/m<sup>2</sup>)



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" I-Studs. A single layer of 1/2" ProRoc® Type C gypsum board is progressively installed on top of the ProRoc® Shaftliner. Two layers of 1/2" ProRoc® Type C gypsum board are installed on the open-stud-face with the first layer installed at right angles to the I-Studs, and the second layer installed parallel to the I-Studs. (Non-Load Bearing)

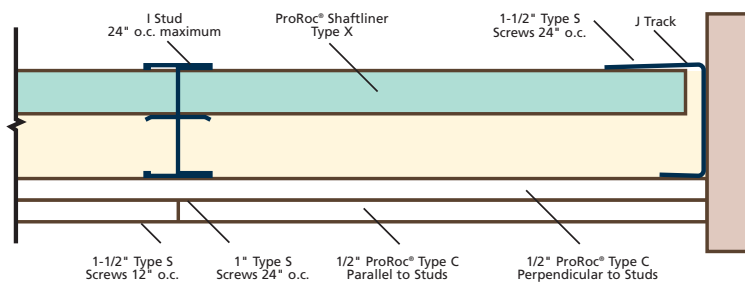
## 2 HR

HORIZONTAL MEMBRANE  
AND DUCT PROTECTION SYSTEM

**FIRE TEST**  
WHI 651- 0306.4  
1989

**THICKNESS\***  
4"  
(102 mm)

**APPROX. WT.**  
10-1/2 #/sf  
(52 kg/m<sup>2</sup>)



ProRoc® Shaftliner Type X gypsum boards are inserted between 2-1/2", 4" or 6" I-Studs. Two layers of 1/2" ProRoc® Type C gypsum board are installed on the open-stud-face with the first layer installed at right angles to the I-Studs, and the second layer installed parallel to the I-Studs. (Non-Load Bearing)

## 2 HR

HORIZONTAL  
SYSTEM

CORRIDOR

**FIRE TEST**  
WHI 651- 0306.4  
1989

**THICKNESS\***  
3-1/2"  
(89 mm)

**APPROX. WT.**  
9 #/sf  
(45 kg/m<sup>2</sup>)

\*Diagrams shown with 2-1/2" stud configurations. System thickness varies according to stud size application.

# Data Tables

## Stud Type and Steel Thickness<sup>1</sup>

STUD DEPTH	MINIMUM BARE STEEL THICKNESS <sup>2</sup>		
	Phillips Manufacturing I-Stud	SCAFCO I-Stud	Dietrich C-T Stud
2-1/2"	0.020" (25 gage)	0.0183"	0.0219"
	0.0329" (20 gage)	0.0325"	0.0304"
	NA	NA	0.0361"
4"	0.020" (25 gage)	0.0183"	0.0219"
	0.0329" (20 gage)	0.0325"	0.0333"
	0.040" (19 gage)	NA	0.038"
6"	0.020" (25 gage)	0.0183"	0.0219"
	0.0329" (20 gage)	0.0325"	0.0333"
	0.040" (19 gage)	NA	0.038"

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa.

N/A = Not applicable.

<sup>1</sup>Steel minimum yield strength of 33,000 psi.

<sup>2</sup>Minimum design bare (uncoated) steel thickness.

## Maximum Horizontal Span<sup>1,3</sup>

I-STUD SIZE	STUD THICKNESS (nominal gage/inch)	Corridor Ceiling and Stair Soffit <sup>2</sup>		Horizontal Membrane and Duct Protection <sup>3, 4</sup>
		One-hour rated <sup>5</sup>	Two-hour rated <sup>6</sup>	
2-1/2"	25/0.0183	7'-10"	8'-8"	7'-6"
2-1/2"	20/0.0325	9'-1"	10'-6"	10'-0"
4"	25/0.0183	NA	10'-9"	10'-2"
4"	20/0.0325	NA	13'-2"	11'-6"
6"	20/0.0325	NA	16'-10"	14'-8"

For SI: 1 inch = 25.4 mm, 1 psi = 6.89 kPa, 1 psf = 47.9 Pa.

N/A = Not applicable.

<sup>1</sup>Systems are designed to support their own dead weight only, and should not be used where there is access to an attic or loft space above, or anywhere else where there is any probability of storage above.

<sup>2</sup>Load of 10 psf and deflection limitation of L/360.

<sup>3</sup>Load of 15 psf and deflection limitation of L/360.

<sup>4</sup>Ducts are permitted to be designed as a separate system and are not part of a floor/ceiling or roof/ceiling assembly.

<sup>5</sup>Minimum 5/8-inch-thick ProRoc® Type X Gypsum Board.

<sup>6</sup>Minimum 1/2-inch-thick ProRoc® Type C Gypsum Board.

# Data Tables

## Allowable Wall Heights for the I-Stud (two-hour wall)<sup>1</sup>

STUD DEPTH	TYPE OF FIRE-RESISTANT ASSEMBLY	STEEL THICKNESS	DEFLECTION	DESIGN AIR PRESSURE LOAD (WIND LOAD)			
				5 psf	7.5 psf	10 psf	15 psf
2-1/2"	1-hour	0.0183" (25 gage)	L/120	13'-10"	9'-1"	7'-10"	6'-4"
			L/240	11'-2"	9'-1"	7'-10"	6'-4"
			L/360	10'-0"	8'-9"	7'-10"	6'-4"
2-1/2"	1-hour	0.0325" (20 gage)	L/120	16'-5"	14'-4"	11'-3"	9'-2"
			L/240	13'-1"	11'-4"	10'-4"	9'-1"
			L/360	11'-4"	10'-0"	9'-1"	7'-11"
2-1/2"	2-hour	0.0183" (25 gage)	L/120	14'-4"	11'-8"	10'-2"	8'-7"
			L/240	12'-5"	10'-10"	9'-10"	8'-7"
			L/360	10'-10"	9'-6"	8'-8"	7'-6"
4"	2-hour	0.0183" (25 gage)	L/120	17'-4"	14'-5"	12'-3"	10'-0"
			L/240	16'-9"	14'-5"	10'-9"	8'-10"
			L/360	14'-8"	12'-6"	10'-9"	8'-10"
2-1/2"	2-hour	0.0325" (20 gage)	L/120	20'-9"	16'-11"	14'-8"	11'-11"
			L/240	16'-5"	14'-4"	13'-0"	11'-4"
			L/360	14'-4"	12'-3"	10'-6"	10'-0"
4"	2-hour	0.0325" (20 gage)	L/120	22'-8"	18'-6"	16'-0"	13'-1"
			L/240	19'-0"	16'-8"	15'-1"	13'-1"
			L/360	16'-7"	14'-6"	13'-2"	11'-6"
6"	2-hour	0.0325" (20 gage)	L/120	25'-10"	21'-1"	18'-3"	14'-11"
			L/240	24'-3"	21'-1"	18'-3"	14'-11"
			L/360	21'-2"	18'-6"	16'-10"	14'-8"

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 psf = 47.9 Pa.

<sup>1</sup> Allowable heights are based on transverse load tests complying with ICC-ES Interim Criteria AC86, with studs spaced a maximum of 24 inches on center.

<sup>2</sup> Limiting height is based on the lesser height of deflection or strength.

<sup>3</sup> Limiting height with deflection greater than 14-foot assemblies are based on strength results of 14-foot assemblies.

# Architectural Specifications

## Section 09 21 16 or 09265 Gypsum Board Shaftwall Assemblies

### PART 1—GENERAL

#### 1.1 PROJECT DESCRIBED

Non load bearing one, two or three hour fire resistive shaftwall systems, staircase enclosures, or other mechanical enclosures.

#### 1.2 QUALIFICATIONS

All gypsum materials used in the described system installations shall be manufactured by CertainTeed (formerly BPB) and carry the ProRoc® brand identity. CertainTeed or its representative will provide verification that the products applicable to the described performance specification meet the applicable ASTM standards for performance described herein. Additional framing materials including J-Track, I-Studs or Dietrich Industries C-T Studs and fasteners must be supplied and installed in accordance with printed installation instructions as instructed by the manufacturer and required by the testing agencies.

#### 1.3 SUBMITTALS

Submit system descriptions and construction guide brochures for each assembly indicating component materials, fasteners, finishes, dimensions and related information showing compliance with stated construction guidelines.

#### 1.4 DELIVERY, STORAGE, HANDLING

ProRoc® gypsum boards are delivered in original, unopened containers or wrapped and stacked flat on a smooth, level surface, but not stored directly on concrete floors. When spacers are used, they are positioned closely enough together to minimize warpage. Care is taken to prevent damage to edges and corners. Always keep ProRoc® boards dry prior to installation.

#### 1.5 INSTALLATION ENVIRONMENT

ProRoc® gypsum board must not be used in areas that are continuously or repeatedly exposed to excessive moisture or steam or exposed to temperatures above 125°F (52°C). No treatment of joints shall be done until the interior temperature has been maintained at a minimum of 50°F for at least 48 hours prior to application of joint treatment materials. Adequate continuous ventilation must also be provided during the finishing of joints.

Joints, corners and fastener heads shall be finished in accordance with ASTM C 840, the GA-216, the Fire Resistance Design Manual GA-600 and ProFin Joint Compound manufacturer's instructions. Joint Compound shall comply with ASTM C 475. No finishing is required on the shaft side of partitions.

UL Design U417, ICBO ER-4924, ICBO ER-3579 and ICC ES NER-506

For further technical information regarding sound control and fire resistance refer to the following reports: Gypsum Association Fire Resistance Design Manual - GA-600 (GA WP 7008, WP 7020, WP 7056, WP 7057, WP 7078, WP 7082, WP 7083, WP 7098, WP 7099)

### PART 2—PRODUCTS

#### 2.1 MATERIALS

##### A. Steel Framing

Studs complying with the requirements for ASTM A 653 S5 Grade 33.

##### A-1. Stud Form

Studs can be in the form of I-Studs or Dietrich Industries C-T Studs with J-Tracks.

##### A-2. Stud Width

Galvanized I or C-T Studs are available in widths of 2-1/2, 4, and 6" (63.5 mm, 102 mm, 152 mm).

##### A-3. Stud Thickness

Studs are manufactured from steel having minimum design steel thicknesses of 0.0188" and 0.0329" (0.465 mm and 0.826 mm).

##### A-4. Stud Coating

Studs have a G40 or G60 galvanized coating.

##### B. Fasteners

1-5/8" long No. 6 Type S screws 1" long No. 6 Type S buglehead screws 3/8" long Type S panhead screws

##### C. ProRoc® Gypsum Board

C-1. ProRoc® Shaftliner Type X - 1" thick

C-2. ProRoc® Type C - 1/2" thick

C-3. ProRoc® Type X - 5/8" thick

##### D. ProFin™ Joint Finishing

D-1. ProFin™ Brand Joint Compound

D-2. ProFin™ Brand Joint Tape

##### E. Acoustical Sealant

##### F. Fiberglass or Mineral Fiber Insulation 1-1/2"

##### G. RC-1 Resilient Channels

### PART 3—INSTALLATION

#### 3.1 CONSTRUCTION BRIEFS

##### General

Construction consists of steel studs and tracks faced on one side with ProRoc® Shaftliner Type X and on the opposite side with one, two, or three (depending on the application specifications) layers of either 1/2" ProRoc® Type C, 5/8" ProRoc® Type C or 5/8" ProRoc® Type X gypsum board. The following steps pertain to one, two and three hour fire rated installation with one finished side:

1. Plan and lay out metal framing components to ensure that all wall sections are plumb and properly aligned.
2. Install J-Track along the ceiling line and vertically at columns and abutting partitions, positioning the long legs closest to the shaft. Secure each piece with the appropriate power driven fasteners spaced a maximum 24" o.c.
3. Attach J-Track to the floor with fasteners spaced at 24" o.c.

4. Install ProRoc® Shaftliner Type X boards vertically. The leading edge of the first panel must be attached to the long leg of the vertical J-Track with 1-5/8" Type S screws spaced 24" o.c. Secure the top and bottom edges using the same fasteners and spacing.
5. Friction fit an I or C-T Stud into the top and bottom tracks and slide it snugly against the ProRoc® Shaftliner Type X board. Make sure the edge of the board is in full contact with the center web of stud and covered by all of the tabs.
6. Place the next ProRoc® board between the tabs and flange on the opposite side of the I or C-T Stud with no screw attachments required.
7. Install subsequent ProRoc® Shaftliner Type X boards and I or C-T Studs in the same manner. Check periodically to ensure they are plumb.
8. At the end of a partition run, cut the last panel slightly narrower and shorter than the opening to facilitate installation.
9. For walls exceeding 12' in height, ProRoc® Shaftliner Type X board end joints should fall alternately in the upper and lower 1/3 of the partition. Joints may be butted together or use an I or C-T Stud placed horizontally between boards to secure each joint.
10. Frame all cut openings in the shaft side with J-Track, providing adequate structural support for openings over 48".
11. Elevator door frames should be tied to shaftwall enclosures, however, must remain independently supported by the building frame.

##### Installation of Finished Side

1. Apply a single layer of 5/8" ProRoc® Type X or 1/2" ProRoc® Type C board with 1" Type S screws for one hour rated applications. Apply a second layer with 1-5/8" Type S screws for two hour rated applications, and a third layer with 2-1/4" Type S screws for three hour rated applications. Alternate layers between horizontal and vertical attachment so that outside layer is installed vertically.
2. Holding the gypsum board firmly against the framing, begin fastening in the center of each sheet and move outward to ends and edges.
3. Space screws at 12" o.c. in the field of the board and 8" o.c. around the perimeter of base layer.
4. Set fastener heads slightly below the surface without breaking the face paper or damaging the gypsum core.
5. Install sheets in a brick pattern with all ends supported by framing members.

For finishing both sides, apply a single layer of 5/8" ProRoc® Type X or 1/2" ProRoc® Type C vertically to ProRoc® Shaftliner Type X with 1" Type S screws. For sound rated partitions follow instructions that include filling the stud cavity with fiberglass or mineral fiber insulation and installation of finish side board onto 25 gage resilient furring channels.

### LIMITED WARRANTY

CERTAINTEED CORPORATION EXPRESSLY WARRANTS TITLE AND THAT THE PRODUCTS SOLD BY IT HEREUNDER ARE FREE FROM DEFECTS IN MATERIALS AT THE TIME OF SHIPMENT. THIS WARRANTY IS LIMITED TO THE ORIGINAL OWNER, AND MAY NOT BE ASSIGNED OR TRANSFERRED. THIS WARRANTY MAY NOT BE AMENDED, RESTATED OR ENLARGED BY ANY CERTAINTEED REPRESENTATIVE, WRITTEN SALES INFORMATION OR DRAWINGS. EXCEPT FOR SUCH EXPRESS WARRANTY, CERTAINTEED MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED AND ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND OTHER WARRANTIES OF ANY KIND ARE HEREBY DISCLAIMED BY CERTAINTEED AND EXCLUDED. PURCHASER AGREES THIS HAS BEEN NEGOTIATED AND CONSENTS HERETO. AS PURCHASER'S SOLE AND EXCLUSIVE REMEDY, CERTAINTEED SHALL, AT CERTAINTEED'S SOLE OPTION, REPLACE OR REPAIR ANY DEFECTIVE PRODUCTS, REFUND THE PURCHASE PRICE PAID FOR DEFECTIVE PRODUCTS, OR GRANT A REASONABLE ALLOWANCE BASED ON THE PURCHASE PRICE OF SUCH DEFECTIVE PRODUCTS. ANY CLAIMS OR EXCEPTIONS BY PURCHASER FOR DEFECTIVE PRODUCTS MUST BE MADE IN WRITING WITHIN 30 DAYS AFTER PURCHASER'S RECEIPT OF SHIPMENT AND IN ALL EVENTS BEFORE INSTALLATION IS COMMENCED, AND PURCHASER SHALL GIVE CERTAINTEED AN OPPORTUNITY TO INVESTIGATE. CERTAINTEED IS FURNISHING BASIC PRODUCTS AT STANDARD PRICES AND IS NOT INSURING PURCHASER AGAINST POSSIBLE CONSEQUENCES OF ERROR, OMISSION OR NEGLIGENCE IN PRODUCTION OR DELIVERY, EXCEPT FOR REPLACEMENT OR REPAIR OF THE PRODUCT, REFUND OF THE PURCHASE PRICE, OR GRANT OF A REASONABLE ALLOWANCE, IN CERTAINTEED'S SOLE DISCRETION. CERTAINTEED SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE ON ACCOUNT OF ANY IMPERFECTION, DEVIATION FROM SPECIFICATIONS OR OTHER DEFECT IMPAIRING THE QUALITY, VALUE OR SUITABILITY FOR ANY PURPOSE OF ANY PRODUCT SOLD HEREUNDER, WHETHER PURSUANT TO THE EXPRESS LIMITED WARRANTY OR OTHERWISE, IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR CONSEQUENTIAL, SPECIAL, INCIDENTAL, INDIRECT, PENAL OR CONTINGENT DAMAGES, WHETHER BASED UPON BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, TORT, BREACH OF CONTRACT, OR ANY OTHER LEGAL THEORY. PURCHASER ASSUMES ALL RISK OF LOSS, DAMAGE OR DELAY INCIDENT TO THE FURNISHING OF ANY PRODUCT BY CERTAINTEED HEREUNDER, OR THE UTILIZATION THEREOF, EXCEPT TO THE EXTENT EXPRESSLY ABOVE PROVIDED. PURCHASER AGREES THIS HAS BEEN NEGOTIATED AND CONSENTS HERETO.

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## ***BPB Joins CertainTeed***

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Today, CertainTeed is pleased to offer the ProRoc® Brand of Gypsum Wallboard Products.

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