certainteed
SAINT-GOBAIN

# GlasRoc® Shaftliner and M2Tech® Shaftliner

## For Shaftwalls

SAINT-GOBAIN

# Dependability When it Matters Most

The walls you build are constructed with precision and hard work. The products you use need to bring that same level of performance. That's why we offer a full range of reliable drywall and finishing solutions that make installations faster and simpler, all while helping you keep pace with demand – no matter the size, complexity, or location of the project.

Our drywall solutions are manufactured with quality and consistency, and our products are readily available, no matter where you are in the country. Plus, our in-house technical support team is at the ready to help you through even the most demanding installations. We have your back, so you can easily stay on schedule, within budget, and keep your projects running smoothly.

## BIM/CAD Information

The BIM and CAD UL fire rated assemblies and sound assemblies can be found on CertainTeed's BIM and CAD Design Studio at **bimlibrary.saint-gobain.com/certainteed**. CertainTeed's BIM and CAD Design Studio provides BIM and CAD details to many UL fire rated assemblies and sound assemblies in an easy to view experience. Plus, downloadable Revit and DWG and PDF CAD Details are available.

## Sustainability

Our products can contribute to the Green Building Council's LEED Credit Qualification in several credit categories to assist in obtaining LEED certification. Sustainable documentation, including recycled content, Environmental Product Declarations (EPD's), Health Product Declarations (HPD's) and low VOC Certifications, can be found at **saintgobain.ecomedes.com**.

# The GlasRoc® and M2Tech® Shaftliner Advantage

GlasRoc® and M2Tech® Shaftliner Type X are specially formulated Type X products for vertical and horizontal applications where enhanced mould resistance is preferred. They can also be used for 2-hour Firewalls in standard multi-family residential applications, refer to the CertainTeed Firewalls brochure for additional information.

## GlasRoc® Shaftliner Type X

**GlasRoc Shaftliner is a paperless mould and moisture resistant gypsum panel combining reinforcing glass mats and a specially formulated fire and moisture resistive, non-combustible core. GlasRoc Shaftliner provides:**

- Long term protection (up to 12 months) to weather exposure.
- A superior water resistant surface that does not inhibit water vapour permeance.
- Type X fire resistance properties, and multiple fire resistance rated designs available.
- Achieves score of 10 for mould resistance per ASTM D3273.

## M2Tech® Shaftliner Type X

**M2Tech Shaftliner Type X features M2Tech moisture and mould resistant technology. M2Tech Shaftliner Type X provides:**

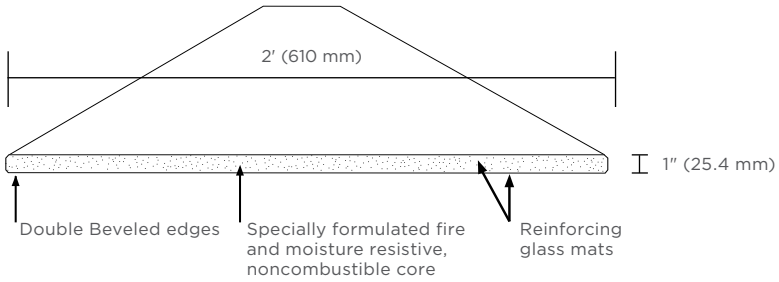
- Additional zone of protection against moisture and mould.
- Numerous Type X fire-rated assembly designs for safety and performance.
- Easy to cut and install. Does not require special tools.
- Enclosed in a moisture and mould resistant, 100% recycled paper.
- Achieves score of 10 out of 10 for mould resistance per ASTM D3273.

The use of GlasRoc and M2Tech Shaftliner Type X, GlasRoc panels and CertainTeed gypsum panels that include M2Tech technology combined, offers superior mould resistance performance for shaftwalls..

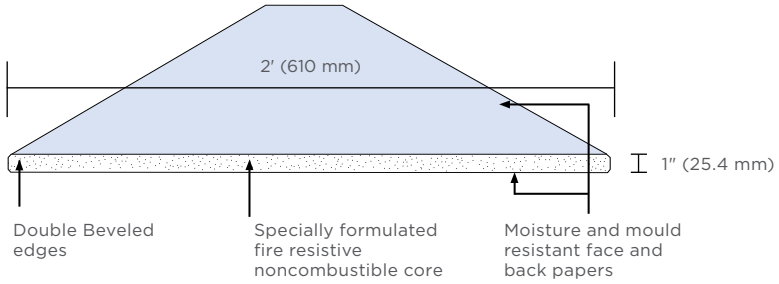
Gypsum Shaftwall assemblies are IBC and NBCC approved and can replace traditional masonry for many shaftwall assemblies. Some inherent advantages of gypsum shaftwalls are: lighter weight, reduced wall thickness, ease and speed of installation, no requirement for scaffolding, and no requirement for additional trades on the job.

Shaftwalls offer the advantages of fire resistance and noise reduction. These walls offer fire resistance ratings of 1 — 4 hours between units and provide sound ratings up to STC 59 when SilentFX® QuickCut™ Type X is used in certain shaftwall configurations.

### GlasRoc® Shaftliner Type X




### M2Tech® Shaftliner Type X




GlasRoc and M2Tech Shaftliner Type X are designed and engineered for use in construction of lightweight shaftwall and fire walls. These assemblies are UL, cUL, and ULC listed for fire resistance. GlasRoc and M2Tech Shaftliner Type X can be substituted with each other.

GlasRoc and M2Tech Shaftliner Type X are 1″ (25.4 mm) thick gypsum panels with a specially formulated, Type X, fire resistive, noncombustible core. Double beveled edges make installation easier.

M2Tech Shaftliner Type X is enclosed in a moisture and mould resistant, blue-grey tinted, 100% recycled paper.

GlasRoc Shaftliner Type X has reinforced glass mats. When tested for mould resistance by an independent lab, GlasRoc and M2Tech Shaftliner Type X achieved the highest possible score of 10 out of 10 per ASTM D3273, *Standard Test Method for Resistance to Growth of Mould on the Surface of Interior Coatings in an Environmental Chamber.*

# GlasRoc® and M2Tech® Shaftwall Assemblies

## 1 to 4 Hour Fire Resistance Ratings

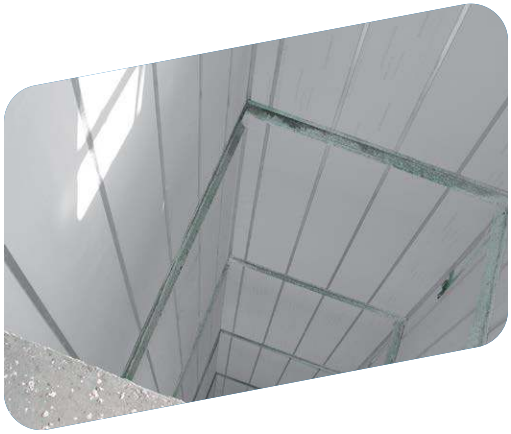
The walls of elevator shafts and stairwells are a vital life safety link in multi-storey buildings. These walls are the main line of defense against fire entering the cavities behind them and spreading rapidly from floor to floor.

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

Gypsum shaftwall assemblies provide one to four hour fire resistance ratings in non-loadbearing configurations and moisture and mould resistance during construction.

The assemblies are designed to withstand the intermittent surges of air pressure caused by fast moving elevator cabs. These assemblies utilize either an I-Stud, C-H Stud or a C-T Stud and J-Track to support layers of 1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X and either 1/2" (12.7 mm) CertainTeed® Type C, 5/8" (15.9 mm) CertainTeed Type X, CertainTeed Type C, FireLITE® Type X, M2Tech Type X, GlasRoc Interior Type X, or SilentFX® QuickCut™ Type X gypsum panels.

Either I-Stud, C-H Stud or C-T Studs may be used in conjunction with GlasRoc or M2Tech shaftwall assemblies. All of the components are noncombustible.



**Shaftwalls can be erected from one side, eliminating the need to build extensive scaffolding.**

GlasRoc and M2Tech Shaftwall 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 24" (610 mm) wide GlasRoc and M2Tech Shaftliner Type X slide quickly into the I-Stud, C-H Stud or C-T Stud and automatically provides 24" (610 mm) o.c. spacing. Shaftwalls can be erected from one side, eliminating the need to build extensive scaffolding. No finishing is required on the shaft side of the partition.

1. All construction shall comply with local building codes.
2. Only those components specified shall be used when constructing any fire or sound rated assembly. Substitutions may adversely affect performance capabilities.
3. Unless otherwise specified in the assembly design, face layer joints of 1/2" (12.7 mm) CertainTeed Type C, 5/8" (15.9 mm) CertainTeed Type X, M2Tech Type X, CertainTeed Type C, FireLITE Type X, GlasRoc Interior Type X, or SilentFX QuickCut Type X gypsum panels shall be taped and finished with joint compound as described in "Surface Preparation of Finished Sides" section.

## Fire Resistance Rated Designs

**Vertical Shaftwalls**

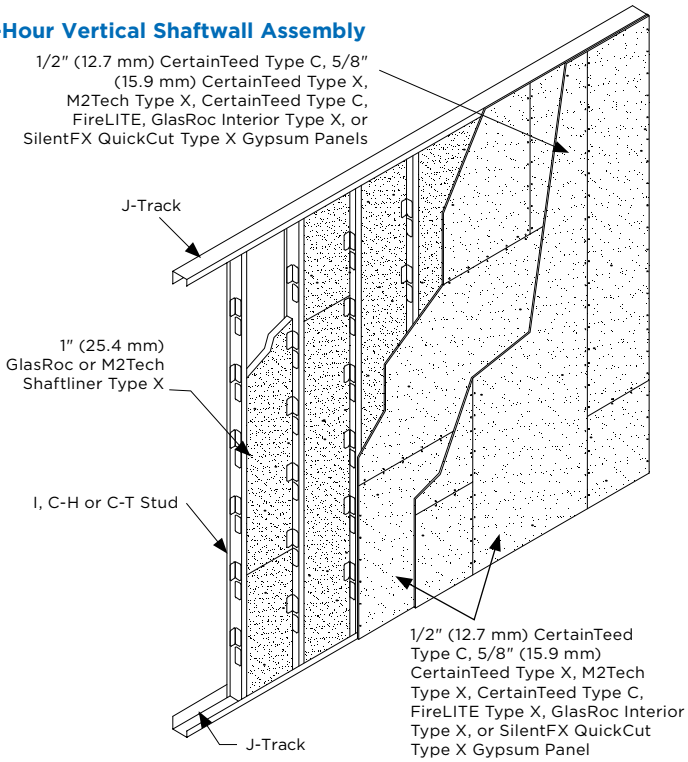
UL/cUL U417, U428, U429, U438, U469, U505, U529, V470, W409, W437, W453, W471, ULC W446

**Horizontal Shaftwalls**

UL/cUL I515

For further technical information regarding sound control and fire resistance for Shaftwall Assemblies contact Gypsum Technical Services at 1-800-446-5284.

**2-Hour Vertical Shaftwall Assembly**



# Working With The Product

## Framing And Installation

### Cutting

The score and snap method is a fast and efficient way to cut GlasRoc® and M2Tech® Shaftliner Type X gypsum panels.

**Steps:**

1. 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 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.

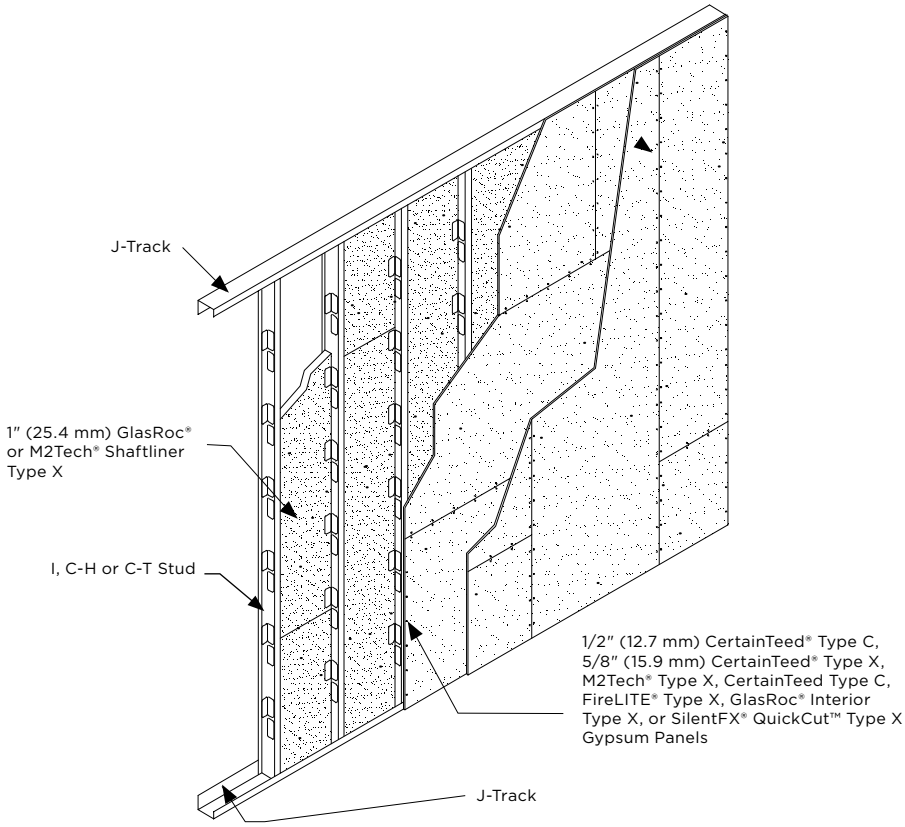
To make cutouts, score around the perimeter on the face and back and tap out the waste piece from the face side. Cutouts can also be made with a drywall saw.

GlasRoc and M2Tech Shaftliner Type X gypsum panels can also be cut with a saw. For information on avoiding dust inhalation, refer to the Safety Data Sheet available on our website, www.certainteed.ca. Safety glasses should always be worn when using power tools.

### Installation

Steel Framing and Installation of GlasRoc or M2Tech Shaftliner Type X gypsum panels.

1. Lay out per construction drawings.
2. Install J-Track along the floor and ceiling and vertically at columns or abutting partitions, positioning the long legs closest to the shaft. Secure each piece with the appropriate power driven fasteners spaced a maximum 24″ (610 mm).
3. Pre plan stud layout 24″ (610 mm) o.c. maximum so the terminal stud on either end will fall a minimum of 8″ (203 mm) from the opening.
4. Install GlasRoc or M2Tech Shaftliner Type X gypsum panels vertically. Cut panels a maximum of 1″ (25 mm) less than floor to ceiling height. The leading edge of the first panel must be attached to the long leg of the vertical J-Track with 1-5/8″ (41 mm) Type S screws spaced 12″ (305 mm) o.c. or by tabs in the J-Track. Secure the top and bottom edges using the same fasteners and spacing or using the tabs.
5. Friction fit an I, C-H or C-T Stud into the top and bottoms tracks and slide it snugly against the GlasRoc or M2Tech Shaftliner Type X gypsum panels. Make sure the edge of the panel is in full contact with the center web of the stud and covered by all of the tabs.
6. Erect adjacent GlasRoc or M2Tech Shaftliner Type X gypsum panels by inserting in the top and bottom J-Track and between the tabs and flange on the opposite side of the I, C-H or C-T Studs to complete framing. Check periodically to ensure they are plumb. Screws are not required for the top and bottom J-Tracks.
7. For doors, ducts or other openings install J-Track as perimeter framing.
8. Frame all cut openings in the shaft side with J-Track, providing adequate structural support for openings over 48″ (1220 mm).
9. When wall height exceeds GlasRoc or M2Tech Shaftliner panel length, GlasRoc or M2Tech Shaftliner may be butted to extend to the full height of the wall. Horizontal joints do not need to be staggered or backed by steel framing. The shorter panel should be at least 24″ (610 mm) long or of sufficient length to engage at least two I, C-H or C-T Stud tabs on each panel edge.
10. As an option, if required in building code jurisdictions, butt joints in GlasRoc or M2Tech Shaftliner Type X gypsum panels may be back blocked in the cavity by screw attaching a 12″ x 24″ (305 mm x 610 mm) piece of 5/8″ (15.9 mm) CertainTeed® Type X, M2Tech Type X, or 1″ (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum panel over the joint to the tabs of the I, C-H or C-T Studs.



# Working With The Product

11. Elevator door frames must be tied to shaftwall enclosures; however, they must remain independently supported by the building frame. Attach GlasRoc® or M2Tech® Shaftwall assembly to elevator door frame jamb and anchor clips with pan head screws. The 3″ (75 mm) leg of the J-Track is used at the intersection of the elevator door frame and shaftwall assembly.
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 Assembly: Finished One Side

1. Apply a single layer of 5/8″ (15.9 mm) CertainTeed® Type X, M2Tech Type X, CertainTeed Type C, SilentFX® QuickCut™, FireLITE® Type X, or GlasRoc Interior Type X gypsum panel vertically with 1″ (25 mm) Type S screws.
2. Holding the gypsum panel firmly against the framing, begin fastening in the center of each sheet and move outward toward ends and edges.
3. Set fastener heads slightly below the surface without breaking the face paper or damaging the gypsum core.

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

1. Install a base layer of 1/2″ (12.7 mm) CertainTeed Type C, 5/8″ (15.9 mm) CertainTeed Type X, M2Tech Type X, CertainTeed Type C , FireLITE Type X, GlasRoc Interior Type X, or SilentFX QuickCut Type X gypsum panels vertically or horizontally with 1″ (25 mm) Type S buglehead screws at 24″ (610 mm) o.c.
2. Apply a face layer of 1/2″ (12.7 mm) CertainTeed Type C, 5/8″ (15.9 mm) CertainTeed Type X, M2Tech Type X, CertainTeed Type C, FireLITE Type X, GlasRoc Interior Type X, or SilentFX QuickCut Type X gypsum panel vertically or horizontally (opposite of base layer) over the face layer with 1-5/8″ (41 mm) Type S screws spaced at 24″ (610 mm) o.c.
3. All joints in the face layer must be staggered with respect to those in the base layer.

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

1. Follow the preceding framing details using I, C-H or C-T Studs and J-Track.
2. Apply GlasRoc or M2Tech Shaftliner Type X, followed by the attachment of 1/2″ (12.7 mm) CertainTeed Type C, 5/8″ (15.9 mm) CertainTeed Type X, M2Tech Type X, CertainTeed Type C, FireLITE Type , GlasRoc Interior Type X, or SilentFX QuickCut Type X gypsum panel in a single facing layer on each side of the studs vertically, parallel to framing, with 1″ (25 mm) Type S screws 12″ (305 mm) on center.

## 2-Hour-Rated Assembly: Sound Control (STC) Rating of 55

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

1. Fill wall cavity with 1-1/2″ (38 mm) CertainTeed Glass Fibre Insulation, or equivalent.
2. Apply a base layer of 5/8″ (15.9 mm) SilentFX QuickCut Type X and a face layer of 5/8″ (15.9 mm) CertainTeed Type X, or M2Tech Type X gypsum panel. Attach the base layer of SilentFX QuickCut Type X using 1″ (25 mm) Type S buglehead drywall screws spaced 24″ (610 mm) o.c. along the edges and in the field of the board with the first screw 3″ (75 mm) from board end. Attach the face layer of CertainTeed Type X, or M2Tech Type X using 1-5/8″ (41 mm) No. 6 Type S buglehead screws spaced 12″ (305 mm) o.c. along the edges and in the field with the first screw 6″ (152 mm) from board end.
3. Apply caulk under the top and bottom tracks and around the exterior face perimeters of each layer of 5/8″ (15.9 mm) SilentFX QuickCut Type X, or M2Tech Type X gypsum panel.

## 3-4-Hour-Rated Assembly

For 3 and 4 hour assemblies, please refer to drawing descriptions.

## 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 C840, GA-216, GA-214, CertainTeed Finishing systems, or equivalent joint compound manufacturer's instructions. Joint compound shall comply with ASTM C475.

1. No surface treatment shall be done until the interior temperature has been maintained at a minimum of 50°F (10°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. Embed tape into the wet compound and allow to dry. For inside corners, crease the tape and work it into the joint.
3. Apply a second coat of compound over the joint and feather to approximately 4″ (102 mm) on each side.
4. Apply a third coat and feather to approximately 6″ (152 mm) on each side.
5. Allow each coat to dry before proceeding.
6. Attach corner bead to outside corners and apply three coats of joint compound as described in steps 3–5.
7. Spot cover all fastener heads with three coats of joint compound applied in different directions.
8. Additional coats of compound may be required to achieve higher Levels of Finish.
9. Lightly sand the last coat of all treated areas, taking care not to roughen the surrounding gypsum panel paper. Smoothing can also be accomplished with a damp sponge.

# Working With The Product

## Finishing:

1/2″ (12.7 mm) CertainTeed® Type C, 5/8″ (15.9 mm) CertainTeed Type X, M2Tech® Type X, CertainTeed Type C , FireLITE®Type X, GlasRoc® Interior Type X, or SilentFX® QuickCut™ Type X gypsum panels can be finished with paint, texture or wallpaper. A 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 C840 for additional finishing instructions. Finishing is not required on shaft side of wall assembly.

## Limitations

- GlasRoc or M2Tech Shaftwall Assemblies are for non-loadbearing partitions and ceilings only.
- GlasRoc or M2Tech Shaftwall Assemblies shall not be exposed to sustained temperatures exceeding 125°F (52°C).
- GlasRoc or M2Tech gypsum panels should not come in direct contact with concrete, masonry or other surfaces that have a high moisture content.
- GlasRoc or M2Tech Shaftwall Assemblies are not designed to serve as an unlined air supply duct. Where gypsum panel is used in air handling system, the panel temperature shall be maintained above the air stream dew point temperature but not higher than 125°F (52°C).
- Caulk with acoustical sealant to seal perimeters and penetrations to minimize air noises and dust associated with air movement.

## Helpful Hints

1. Use a fastening plate to secure the J-Track whenever fasteners are closer than 4″ (102 mm) to the edge. Setting the plate at the time of concrete construction will avoid spalling by mechanical fasteners.
2. Pre-cut I, C-H or C-T Studs 5/8″ (15.9 mm) less than the height of the opening.
3. Pre-cut 1″ (25.4 mm) GlasRoc or M2Tech Shaftliner Type X panels 1″ (25 mm) less than the height of the opening.
4. In structural steel frame construction, install J-Track sections before applying spray-on fireproofing.
5. Items to be anchored to the wall (cabinets, sinks, handrails, etc.) should be fastened to the I, C-H or C-T Studs or to plates secured behind or between the layers of CertainTeed Type X, M2Tech Type X, CertainTeed Type C , FireLITE Type X, GlasRoc Interior Type X, or SilentFX QuickCut Type X.
6. Joint compounds should be applied when room temperatures are maintained at not less than 50°F (10°C). for at least 48 hours prior to joint compound application and until joint compound materials are thoroughly dry.
7. For acoustic sealant and prevention of air leakage, use a bead of acoustical sealant, at the perimeter of each wall under the face layer and under the 2-1/2″ (64 mm) flange of J-Track for shaftwall finished on one side to minimize whistling and dirt accumulation.
8. Use Type S screws for 25 ga. (0.018″ [0.45 mm]) steel framing. Use Type S-12 screws for 20 ga. (0.033″ [0.84 mm]) or heavier steel framing.

## Technical References

For additional information on application and finishing consult:

- ICC Building Codes
- UL/cUL U417, U428, U429, U438, U469, U505, U529, V470, W409, W437, W453, W471, I515, ULC W446
- Gypsum Association Publications GA-214, GA-216, and GA-600
- ASTM C475, C514, C645, C734, C840, C1002, C1047, C1396, C1658, E84, E119,
- CAN/ULC 101, CAN/ULC 102, CAN/ULC 114
- NBCC
- CAN/ULC 702.1

## Handling and Storage

GlasRoc, CertainTeed, M2Tech, FireLITE Type X and SilentFX QuickCut gypsum panels 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 gypsum panels dry prior to installation. CertainTeed assumes no responsibility for consequential damages that may result from the presence of standing water. Reference the Gypsum Association GA-801, *Handing and Storage of Gypsum Panel Products*, for more information.

# Working With The Product

## Product Specifications

| | Type X | M2Tech® Type X | Type C | | FireLITE® Type X | GlasRoc® Interior Type X | SilentFX® QuickCut™ Type X | GlasRoc® or M2Tech® Shaftliner Type X |
|---|---|---|---|---|---|---|---|---|
| Standards | ASTM C1396 | ASTM C1396 | ASTM C1396 | ASTM C1396 | ASTM C1396 | ASTM C1658 | ASTM C1766, ASTM C1396 | ASTM C1396, ASTM C1658 |
| Thickness | 5/8" (15.9 mm) | 5/8" (15.9 mm) | 1/2" (12.7 mm) | 5/8" (15.9 mm) | 5/8" (15.9 mm) | 5/8" (15.9 mm) | 5/8" (15.9 mm) | 1" (25.4 mm) |
| Width/Size | 4' (1220 mm) | 4' (1220 mm) | 4' (1220 mm) | 4' (1220 mm) | 4' (1220 mm) | 4' (1220 mm) | 4' (1220 mm) | 24" (610 mm) |
| Approx. Weight | 2.2 psf (10.7 kg/m$^2$) | 2.2 psf (10.7 kg/m$^2$) | 1.9 psf (9.3 kg/m$^2$ ) | 2.3 psf (11.2 kg/m$^2$) | 1.9 psf (9.3 kg/m$^2$ ) | 2.4 psf (11.7 kg/m$^2$) | 2.8 psf (13.7 kg/m$^2$) | GlasRoc Shaftliner 4.0 psf (19.5 kg/m$^2$) M2Tech Shaftliner Type X 3.7 psf (18 kg/m$^2$) |
| Edges | Tapered | Tapered | Tapered | Tapered | Tapered | Tapered | Tapered | Double Beveled |

CertainTeed Gypsum certifies that the gypsum panel 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.

| Steel Framing | |
|---|---|
| C645 | C645 |
| 25 ga* | 20 ga** |
| 2-1/2" (64 mm), 4" (102 mm) | 2-1/2" (64 mm), 4" (102 mm), 6" (152 mm) |

* .018" (18 mils [0.45 mm])
** .0329" (33 mils [0.84 mm])

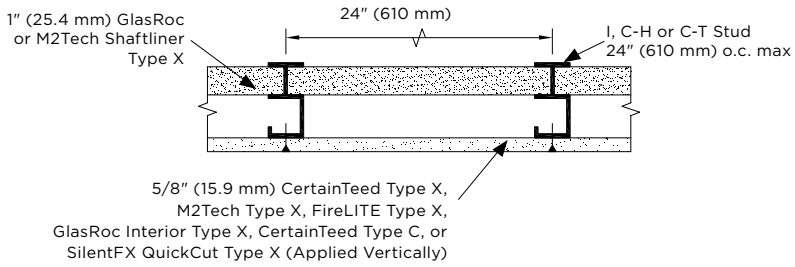
## Surface Burning

| | Type X | M2Tech® Type X | Type C | FireLITE® Type X | GlasRoc® Interior Type X | SilentFX® QuickCut™ Type X | GlasRoc® or M2Tech® Shaftliner Type X |
|---|---|---|---|---|---|---|---|
| CAN/ULC-102 Flame Spread/Smoke Developed | 0/0 | 0/0 | 0/0 | 5/5 | 0/0 | 0/5 | 0/0 |
| ASTM E84 Flame Spread/ Smoke Developed | Class A 15/0 | Class A 15/0 | Class A 15/0 | Class A 0/0 | Class A 0/0 | Class A 0/0 | GlasRoc Shaftliner 0/0 Class A M2Tech Shaftliner 15/0 Class A |

# Vertical Assemblies

## 1 and 2 Hour Fire Resistance Ratings

### Fire Resistance Rated Assembly Designs Finished One Side




1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm), 4" (102 mm) or 6" (152 mm) I, C-H, or C-T Studs. A single layer of 5/8" (15.9 mm) CertainTeed® Type X, M2Tech® Type X, FireLITE® Type X, GlasRoc® Interior Type X, CertainTeed Type C, or SilentFX® QuickCut™ Type X gypsum panels are applied vertically, parallel to framing, on open stud-face side with 1" (25 mm) Type S screws spaced 12" (305 mm) on center. Exposed joints and screwheads are to be finished with CertainTeed Finishing System unless otherwise specified. (Non-Loadbearing)

**1 Hour Fire-Rated**

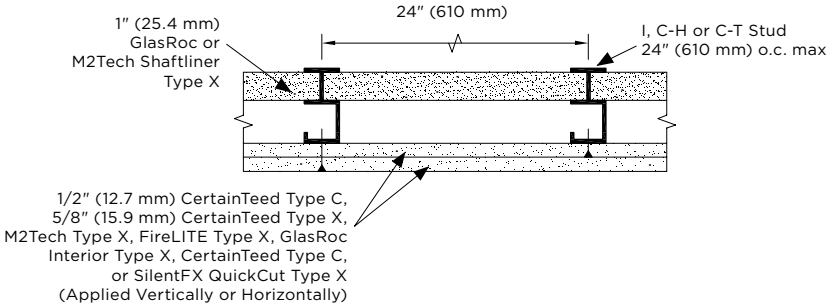
Vertical Shaftwall Assembly
Finished One Side

**Fire Test**
cUL U417/ULC W446

**Sound Report**
**NOAL 19-0705 STC 45**
with 2-1/2" (64 mm) C-H studs, 5/8" (15.9 mm) CertainTeed Type X, and CertainTeed Glass Fibre Insulation or equivalent

**NOAL 17-1140 STC 49**
with 2-1/2" (64 mm) C-T studs, 5/8" (15.9 mm) SilentFX QuickCut Type X, and CertainTeed Glass Fibre Insulation or equivalent

**Approx. Thickness**
3-1/8" (80 mm)




1" (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm), 4" (102 mm) or 6" (152 mm) I, C-H or C-T Studs. Two layers of 1/2" (12.7 mm) CertainTeed Type C, 5/8" (15.9 mm) CertainTeed Type X, M2Tech Type X, FireLITE* Type X, GlasRoc Interior Type X, CertainTeed Type C or SilentFX QuickCut Type X gypsum panels are applied to one side, with the base layer applied vertically or horizontally to the open-stud-face of framing studs with 1" (25 mm) Type S buglehead screws spaced 24" (610 mm) o.c. The second layer is placed vertically or horizontally (opposite of base layer) over the base layer and fastened using 1-5/8" (41 mm) Type S screws spaced 12" (305 mm) on center. Exposed joints and screwheads are to be finished with CertainTeed Finishing system, or equivalent, unless otherwise specified. (Non-Loadbearing)

**2 Hour Fire-Rated**

Vertical Shaftwall Assembly
Finished One Side

**Fire Test**
cUL U417/ULC W446

**Sound Report**
**NOAL 18-0811 STC 53**
with 2-1/2" (64 mm) C-T studs, 5/8" (15.9 mm) CertainTeed Type X, or M2Tech Type X, resilient channel and CertainTeed Glass Fibre Insulation or equivalent

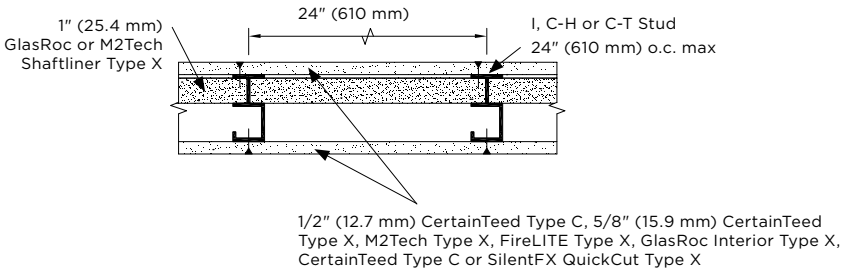
**Approx. Thickness**
3-3/4" (95 mm)

*4" (102 mm) C-T, C-H Studs required when using FireLITE Type X in a 2 hour assembly

# Vertical Assemblies

## 1 and 2 Hour Fire Resistance Ratings

### Fire Resistance Rated Assembly Designs Finished Both Sides




1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm), 4" (102 mm) or 6" (152 mm) I, C-H or C-T Studs. A single layer of 1/2" (12.7 mm) CertainTeed® Type C, 5/8" (15.9 mm) CertainTeed Type X, FireLITE®* Type X, GlasRoc Interior Type X, M2Tech® Type X, CertainTeed Type C or SilentFX® QuickCut™ Type X gypsum panels are applied vertically on both sides, parallel to framing with 1" (25 mm) Type S screws spaced 12" (305 mm) o.c. Joints are staggered or offset. Exposed joints and screwheads are to be finished with CertainTeed Finishing System unless otherwise specified. (Non-Loadbearing)

**2 Hour**
Fire-Rated

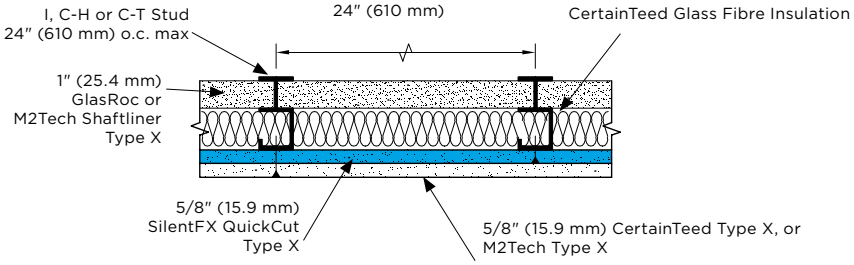
Vertical Shaftwall Assembly
Finished Both Sides

**Fire Test**
cUL U417/ULC W446

**Sound Report**
**NOAL 18-0810 STC 53**
with 2-1/2" (64 mm) C-T studs, 5/8" CertainTeed Type X, resilient channel and CertainTeed Glass Fibre Insulation or equivalent

**Approx. Thickness**
3-3/4" (95 mm)

### Sound Control Assembly Finished One Side




1" (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm) I, C-H or C-T Studs. Fasten the base layer of 5/8" (15.9 mm) SilentFX QuickCut Type X horizontally or vertically to corridor side with 1" (25 mm) screws spaced 24" (610 mm) o.c. starting 3" (75 mm) from the top of each stud. Fasten face layer of 5/8" CertainTeed Type X, or M2Tech Type X gypsum panels opposite of base layer with 1-5/8" (41 mm) screws spaced 24" (610 mm) o.c. staggered 12" (305 mm) from base layer screws starting 6" (152 mm) from top of each stud. Screws are not required along top or bottom tracks. Joints must be offset. Tape and finish corridor joints with CertainTeed products. (Non-Loadbearing)

**2 Hour**
Fire-Rated

Vertical Shaftwall Assembly
Sound Control

Finished One Side

**Fire Test**
cUL U417/ ULC W446

**Sound Report**
**NOAL 17-1141 STC 55**
with CertainTeed Glass Fibre Insulation or equivalent

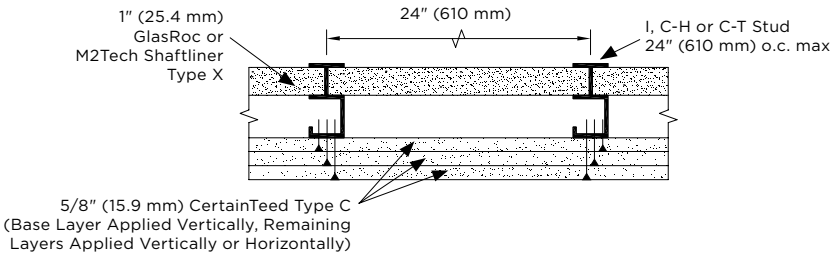
**Approx. Thickness**
3-3/4" (95 mm)

*4" (102 mm) C-T, C-H Studs required when using FireLITE in a 2 hour assembly

# Vertical Assemblies

## 3 hour Fire Resistance Rating

### Fire Resistance Rated Assembly Designs Finished One Side




1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm), 4" (102 mm) or 6" (152 mm) I, C-H or C-T Studs. 5/8" (15.9 mm) CertainTeed® Type C gypsum panels are applied to one side, with the base layer applied vertically to the open-stud-face of framing studs with 1" (25 mm) Type S buglehead screws spaced 24" (610 mm) o.c. The second layer is placed vertically or horizontally (opposite of base layer) over the base layer and fastened using 1-5/8" (41 mm) Type S screws spaced 12" (305 mm) on center. The face layer is attached to studs using 2-1/4" (57 mm) Type S or Type S-12 buglehead screws spaced 16" (406 mm) on center when applied vertically or 12" (305 mm) on center when applied horizontally. Exposed joints and screwheads are to be finished with CertainTeed Finishing system, or equivalent, unless otherwise specified. (Non-Loadbearing)

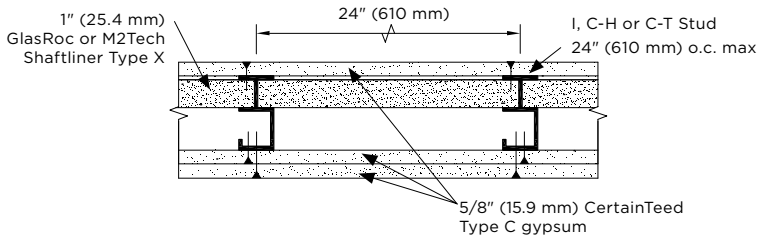
**3 Hour Fire-Rated**

Vertical Shaftwall Assembly
Finished One Side

**Fire Test**
cUL U417/ULC W446

**Sound Report**
**NOAL 18-0719 STC 54**
with 2-1/2" (64 mm) C-T studs, 5/8" (15.9 mm) CertainTeed Type X, and CertainTeed Glass Fibre Insulation or equivalent

**Approx. Thickness**
4-3/8" (111 mm)




1" (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum panels are inserted between 2-1/2" (64 mm), 4" (102 mm) or 6" (152 mm), I, C-H or C-T studs. 5/8" (15.9 mm) CertainTeed Type C gypsum panels applied in two layers to one side of the assembly and one layer to the other side of the assembly. On the two-layer side, the base layer is applied vertically using 1" (25 mm) Type S or Type S-12 buglehead screws spaced 24" (610 mm) on center. The face layer is applied vertically or horizontally using 1-5/8" (41 mm) Type S or Type S-12 buglehead screws spaced 24" (610 mm) on center when applied vertically or 16" (406 mm) on center when applied horizontally. Joints and screwheads are to be finished with CertainTeed Finishing system, or equivalent, unless otherwise specified.

**3 Hour Fire-Rated**

Vertical Shaftwall Assembly
Finished Both Sides

**Fire Test**
cUL U417/ULC W446

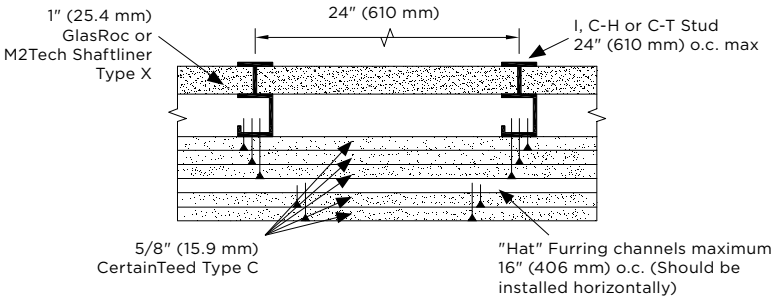
**Sound Report**
**NOAL 18-0720 STC 55**
with 2-1/2" (63.4 mm) C-T studs, 5/8" (15.9 mm) CertainTeed Type X, and CertainTeed Glass Fibre Insulation or equivalent

**Approx. Thickness**
4-3/8" (111 mm)

# Vertical Assemblies

## 4 Hour Fire Resistance Ratings

### Fire Resistance Rated Assembly Designs Finished One Side




1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum panels are inserted between 4" (102 mm) I, C-H or C-T studs. 5/8" (15.9 mm) CertainTeed® Type C panels are applied vertically in five layers. Vertical joints centered over studs and staggered a minimum 24" (610 mm) o.c. The first layer is applied using 1-1/8" (28 mm) type S self-tapping screws spaced 12" (305 mm) o.c. The second layer is secured to the studs using 1-5/8" (41 mm) Type S self-tapping screws spaced 12" (305 mm) o.c. The third layer is secured to the studs using 2-1/4" (57 mm) Type S self-tapping screws spaced 12" (305 mm) o.c. The fourth layer is secured to the furring channels using 1-1/8" (28 mm) Type S self-tapping screws spaced 12" (305 mm) o.c. The fifth layer is secured to the furring channels using 1-5/8" (41 mm) Type S self-tapping screws spaced 12" (305 mm) o.c. Joints and screwheads are to be finished with the CertainTeed Finishing system, or equivalent, unless otherwise specified.

**4 Hour**
Fire-Rated

Vertical Shaftwall Assembly
Finished One Side

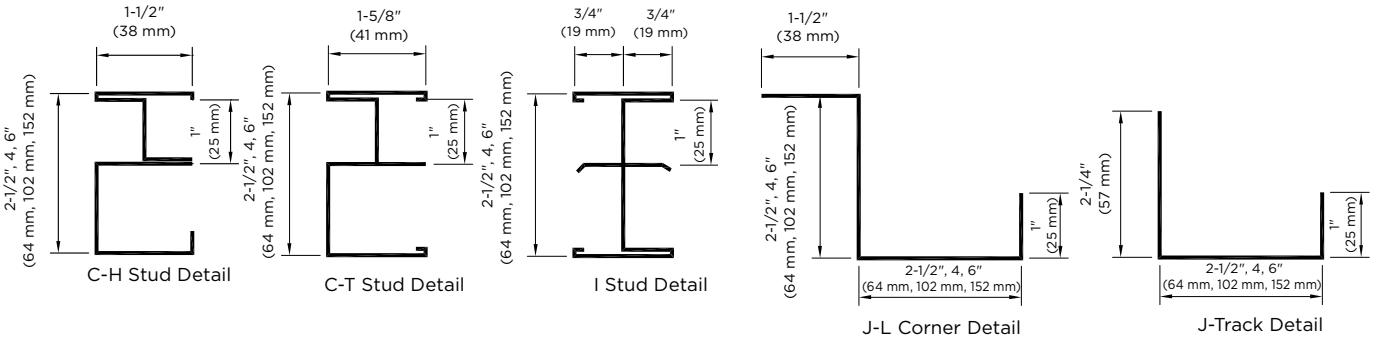
**Fire Test**
UL/cUL W471

**Sound Report**
**NGC 2019098 STC 54**
with CertainTeed Glass Fibre
Insulation or equivalent

**Approx. Thickness**
8" (203 mm)

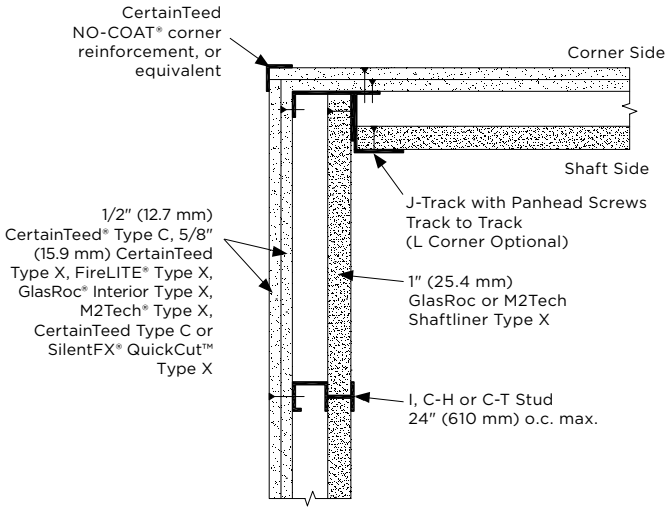
# Vertical Assembly Details

## Section Details

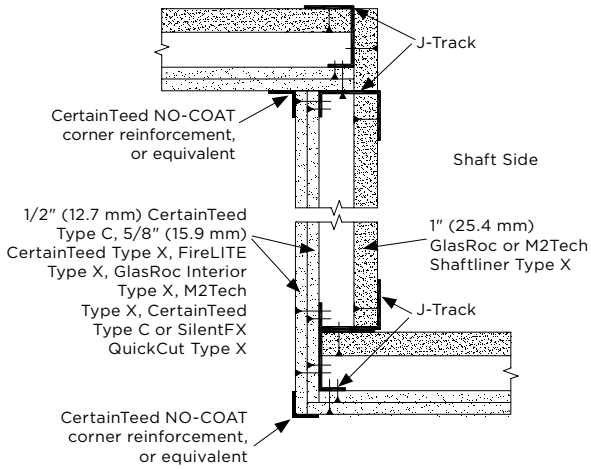



## Details – Finished One Side

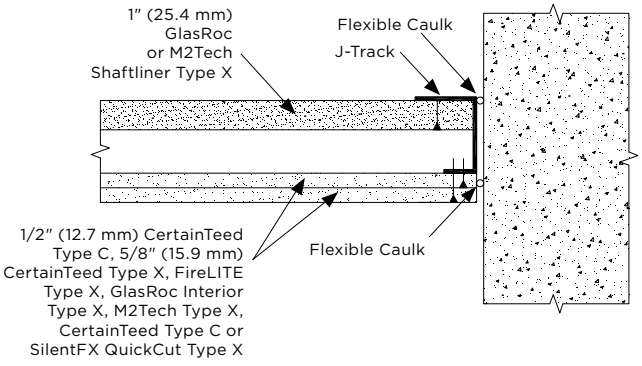
### Outside Corner



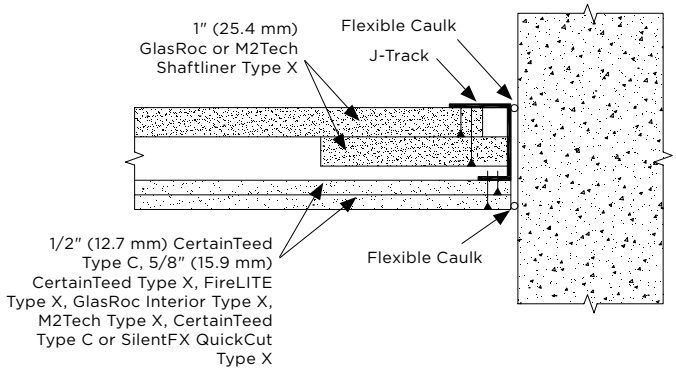

### Inside and Outside Corner




### Typical Start/End of Wall

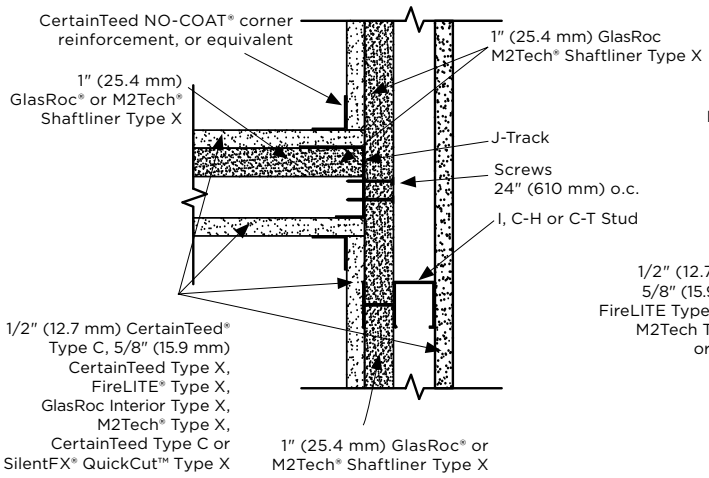



### Alternate End of Wall Section

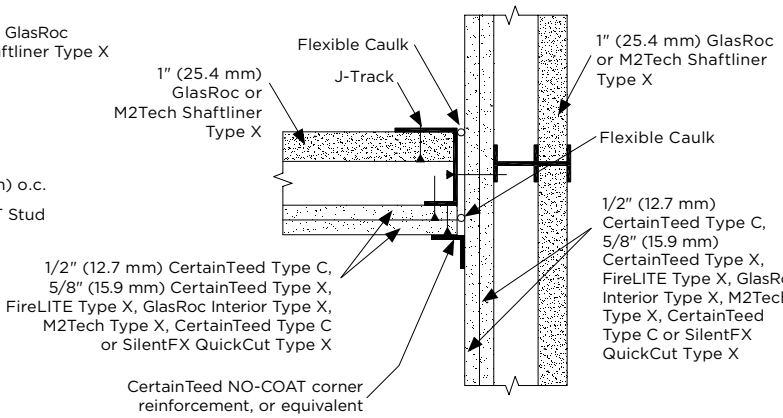


# Vertical Assembly Details

## Wall Intersection on Shaftliner Side

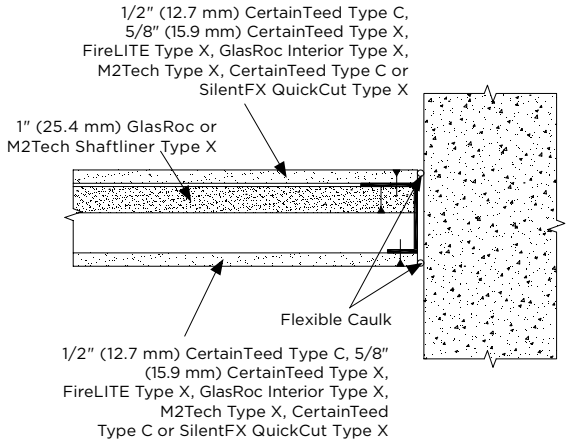



## Separation Wall Intersection on Finished Side

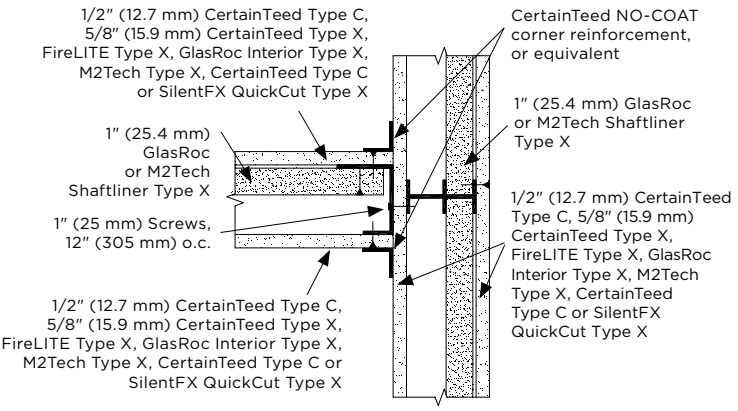



## Details - Finished Both Sides

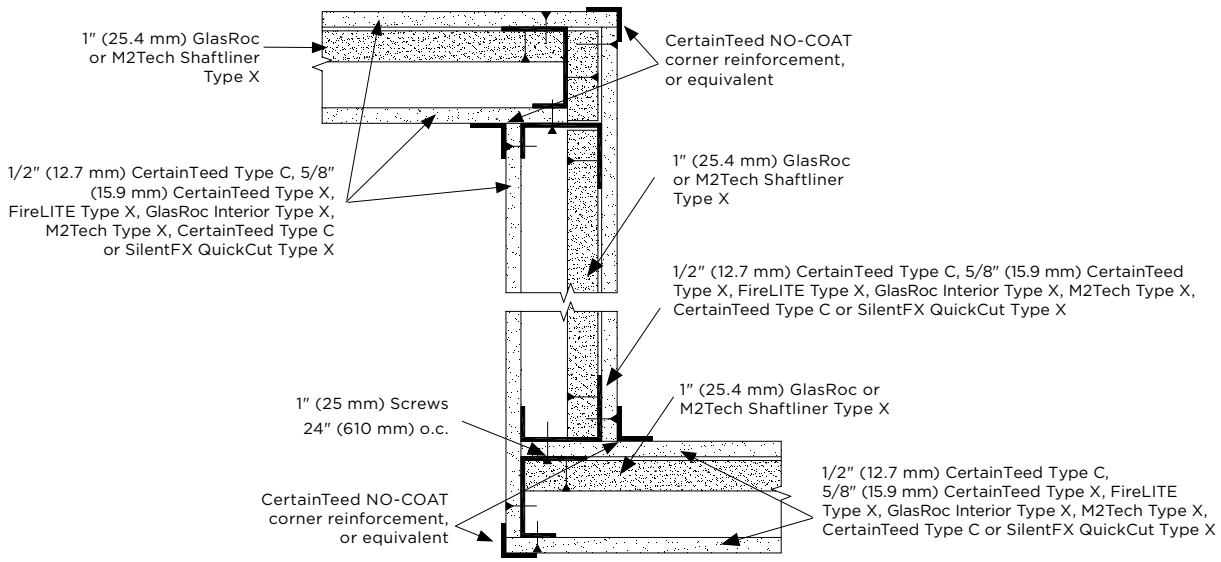
## Abutment to Masonry




## Wall Intersection on Cavity Side



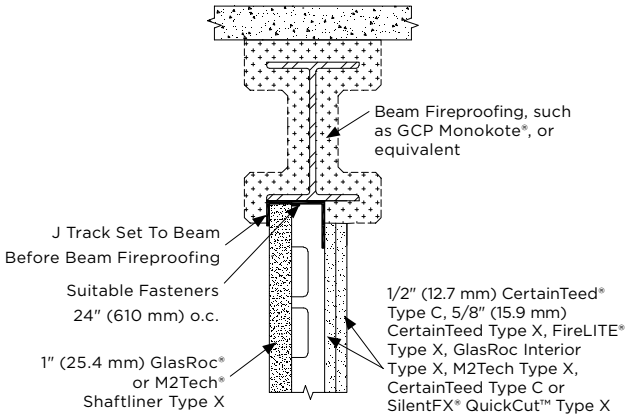

## Inside and Outside Corner



# Additional Details

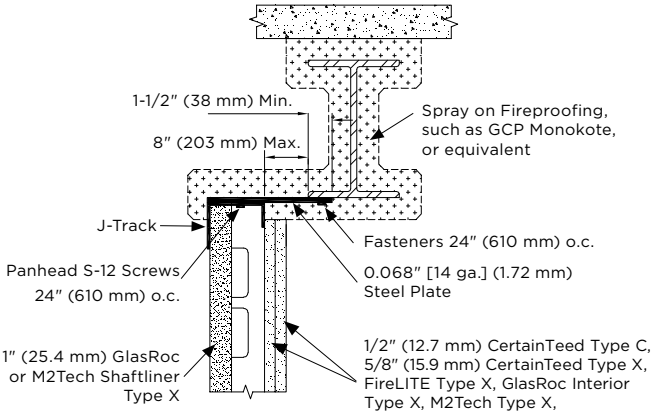
## Shaftwall to Beam

**UL HW-D-0610**



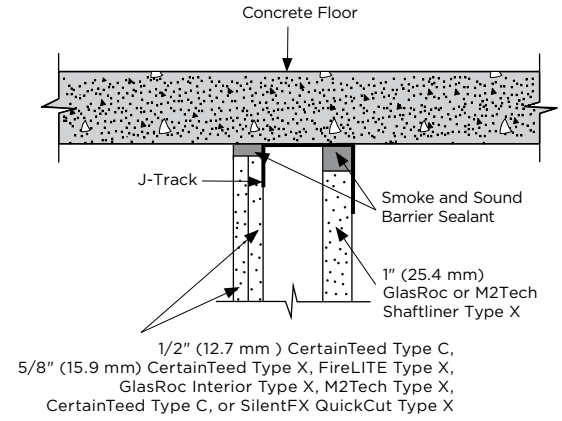

## Shaftwall Offset From Beam

**UL HW-D-0636**



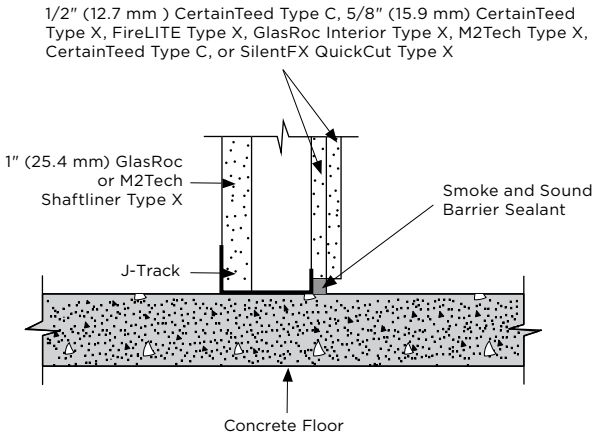

## Head of Wall

**UL HW-D-0603**

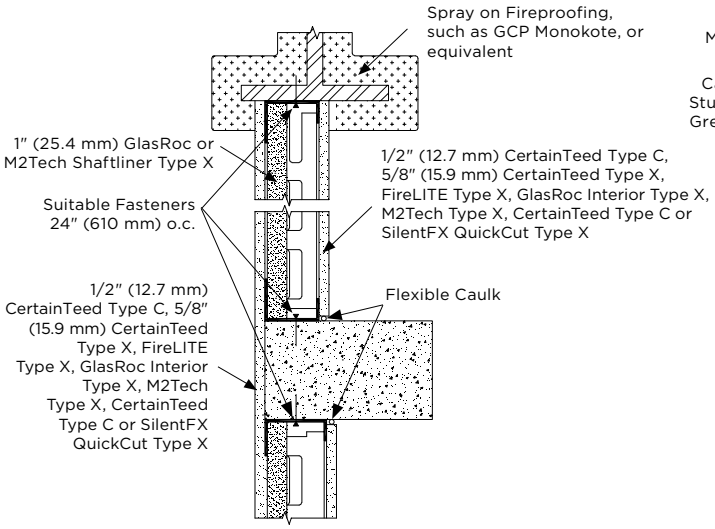



## Base of Wall

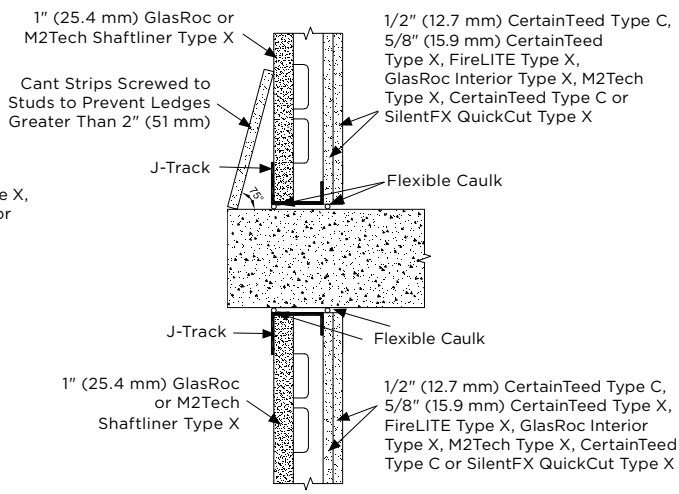
**UL BW-S-0016**




## Top At Beam and Floor Bypass

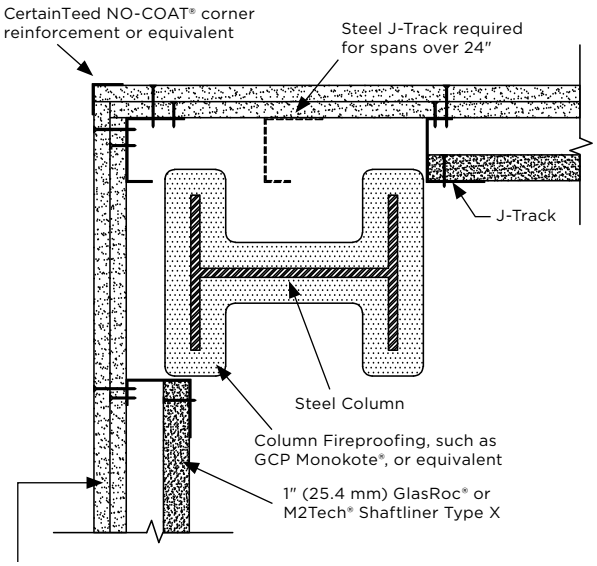



## Shaft Cant



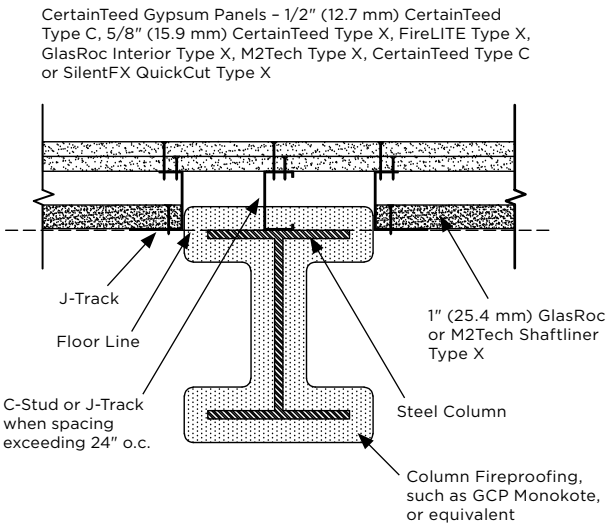
# Additional Details

## Corner Column Bypass

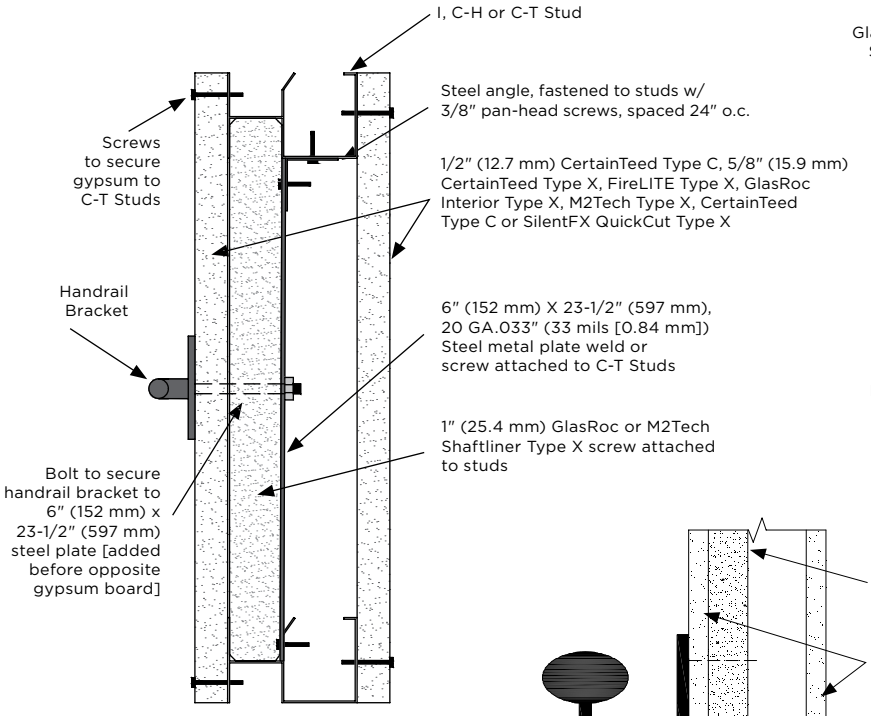



CertainTeed Gypsum Panels – 1/2″ (12.7 mm) CertainTeed Type C, 5/8″ (15.9 mm) CertainTeed Type X, FireLITE® Type X, GlasRoc Interior Type X, M2Tech Type X, CertainTeed Type C or SilentFX® QuickCut™ Type X

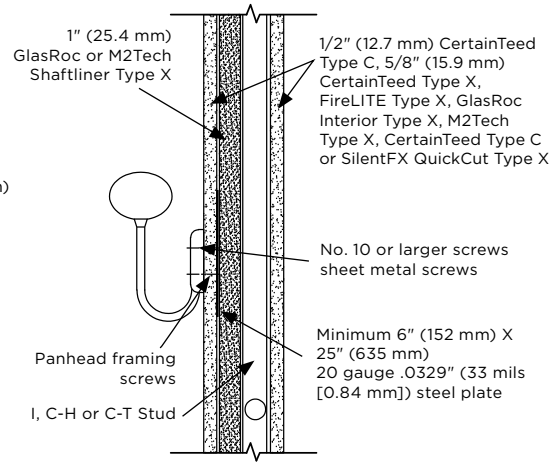
## Bypass of Large Columns



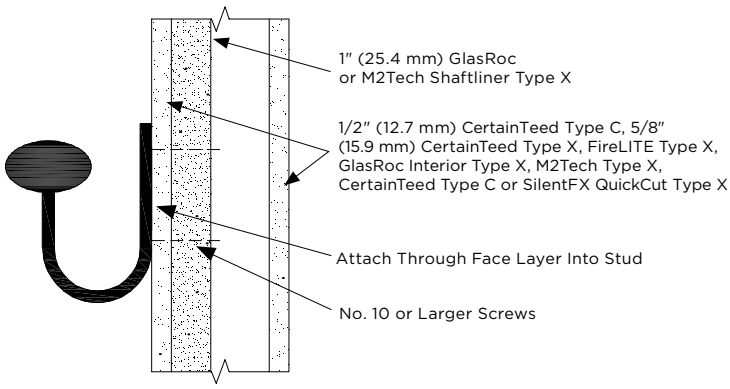

## Hand Rail Attachment Details




**Heavy**



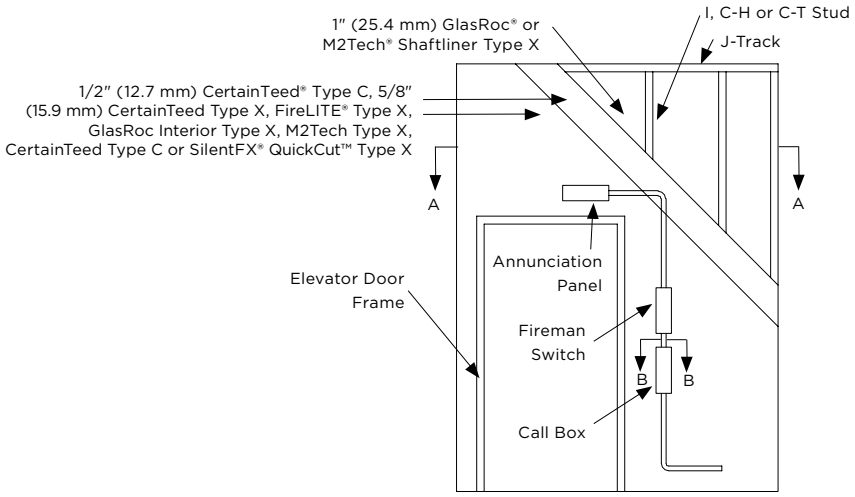

**Medium**

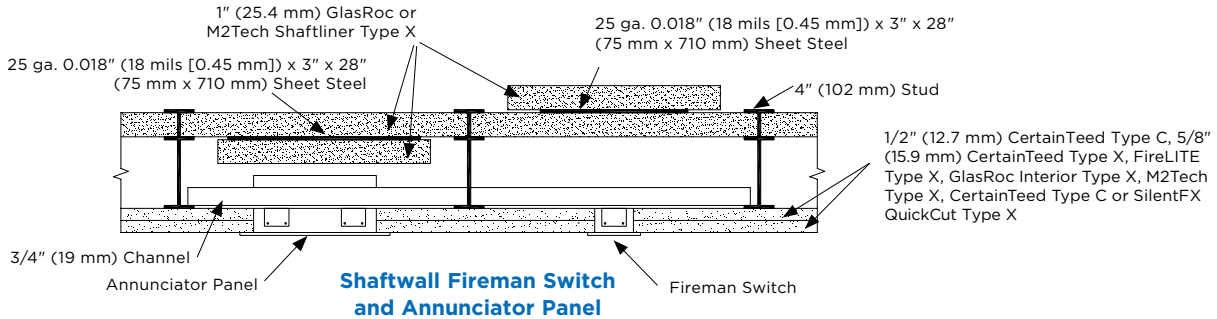



**Light**

# Accessory Details

## Shaftwall Elevator Electrical Control Layout

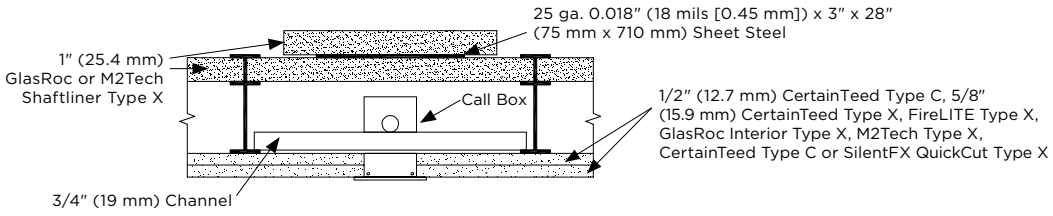



**Shaftwall Fireman Switch and Annunciator Panel**

(Section A-A)

NOTE: Stud Size Varies According to Application



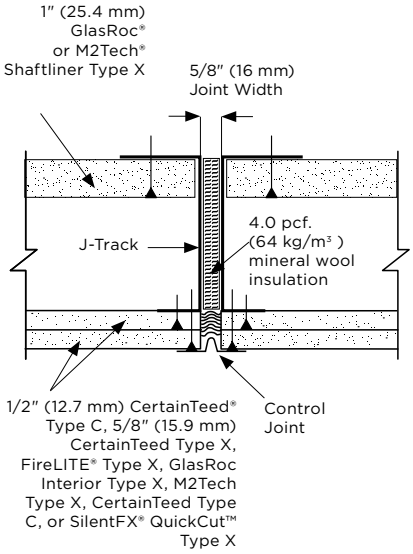

**Shaftwall Call Box**

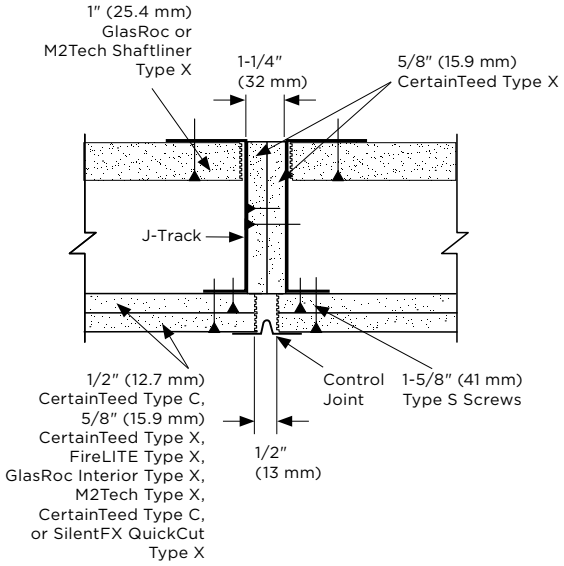
(Section B-B)

NOTE: Stud Size Varies According to Application

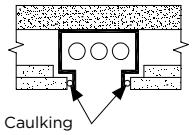
# Accessory Details

## Control Joints

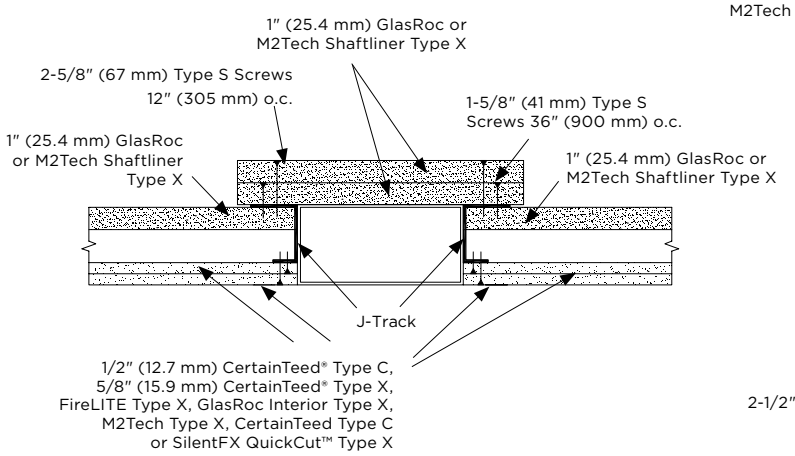


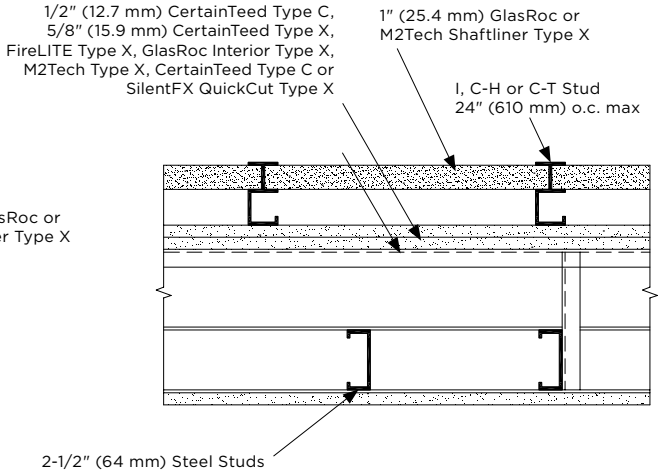

## Outlet Box




## Mail Chute

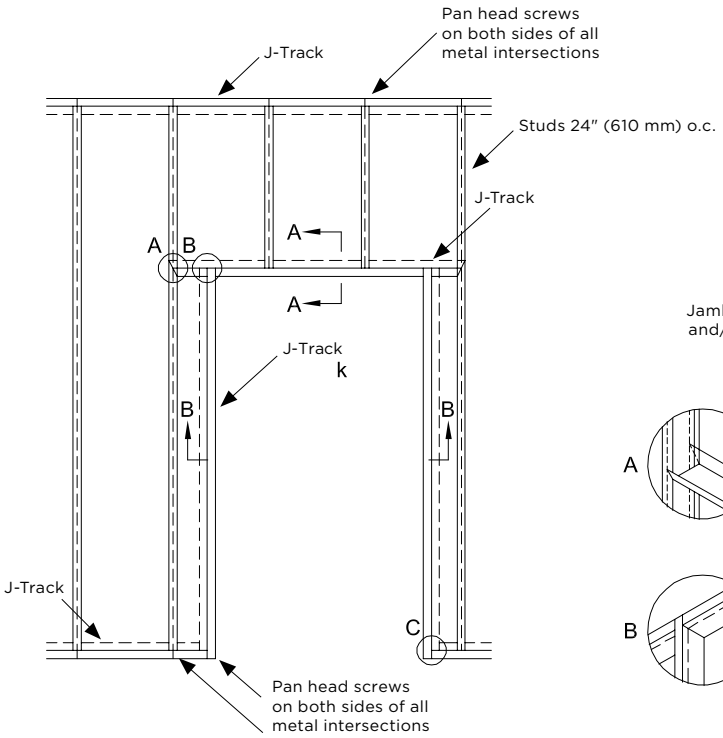



## Chase Wall

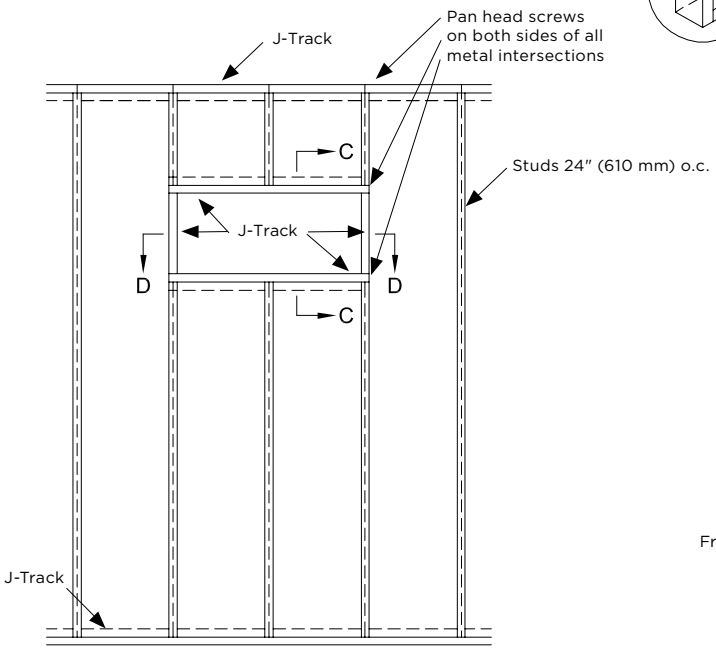


# Openings and Elevator Details

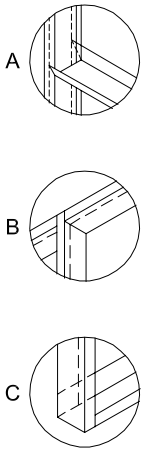
## Illustrated With 2 Hr. Rated Assembly

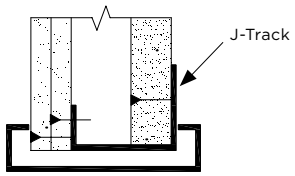



**Door Opening Room Side**

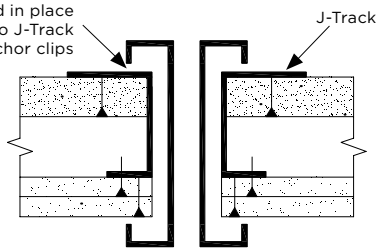



**Door Opening Room Side**

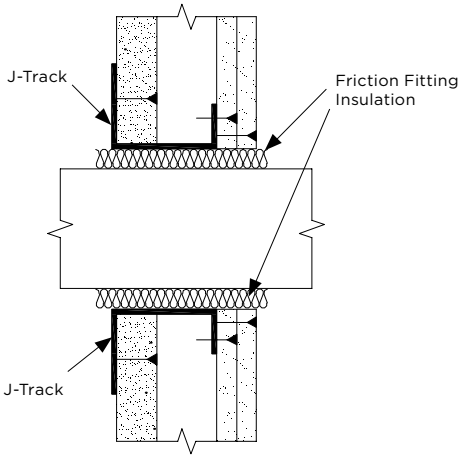


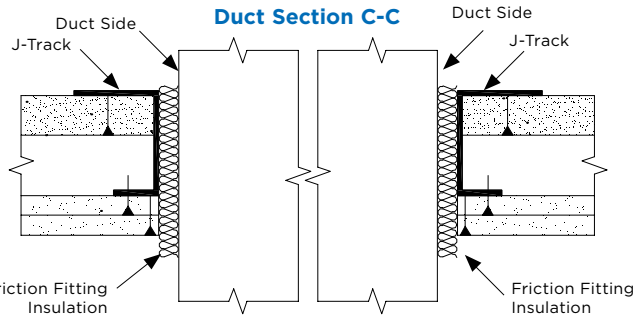

**Header Section AA**




**Cross Section B-B**




**Duct Section C-C**



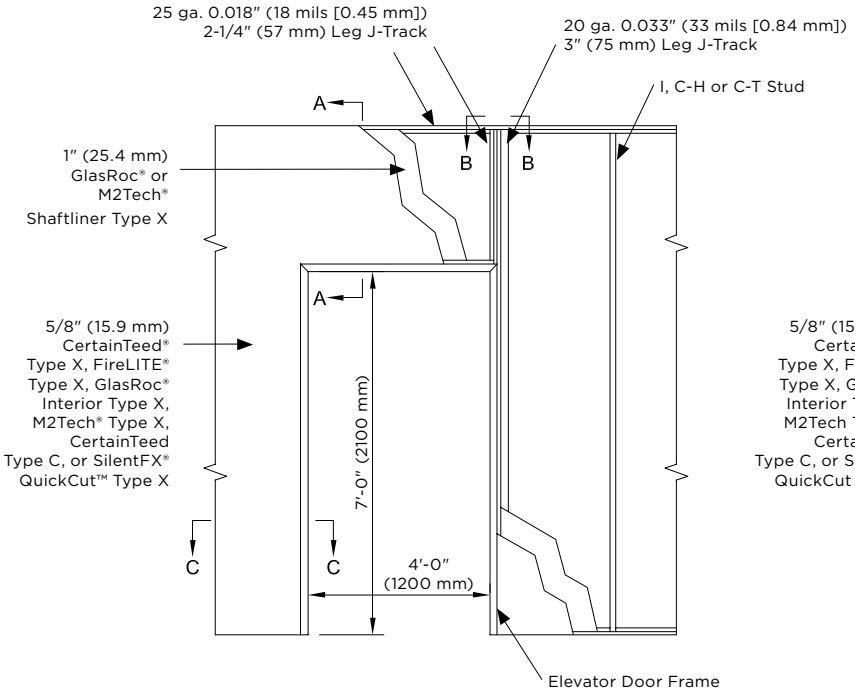

**Duct Section D-D**

NOTE:
Clearance openings and attachments details should be as per fire damper manufacturer's installation requirements

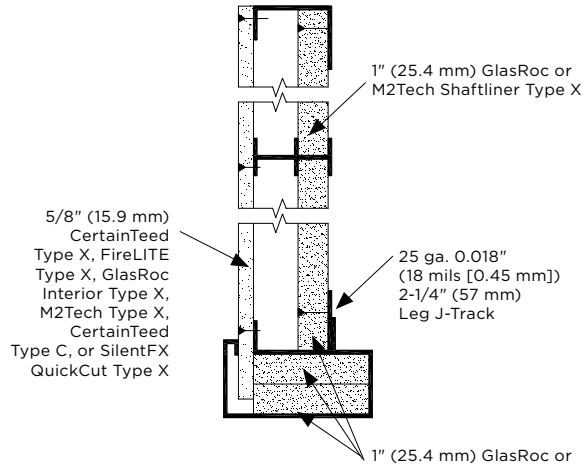
# Elevator Door Frames 7′ (2.13 m)

## One Hour Details

### Elevator Door Framing

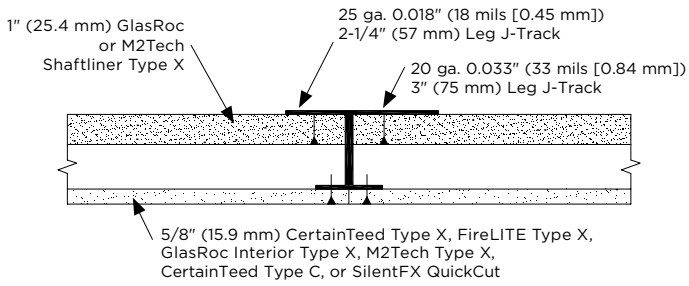



### Elevator Door Head



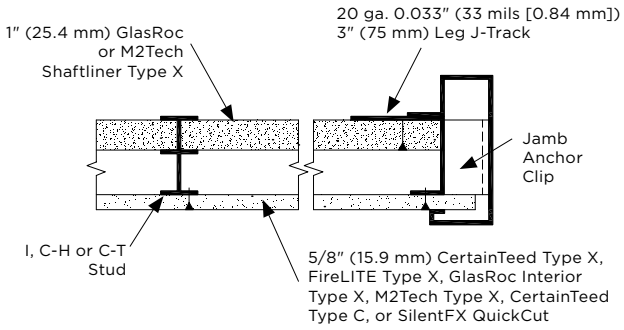

Section A-A

### J-Track Framing Above Door




Section B-B

### Elevator Door Jamb

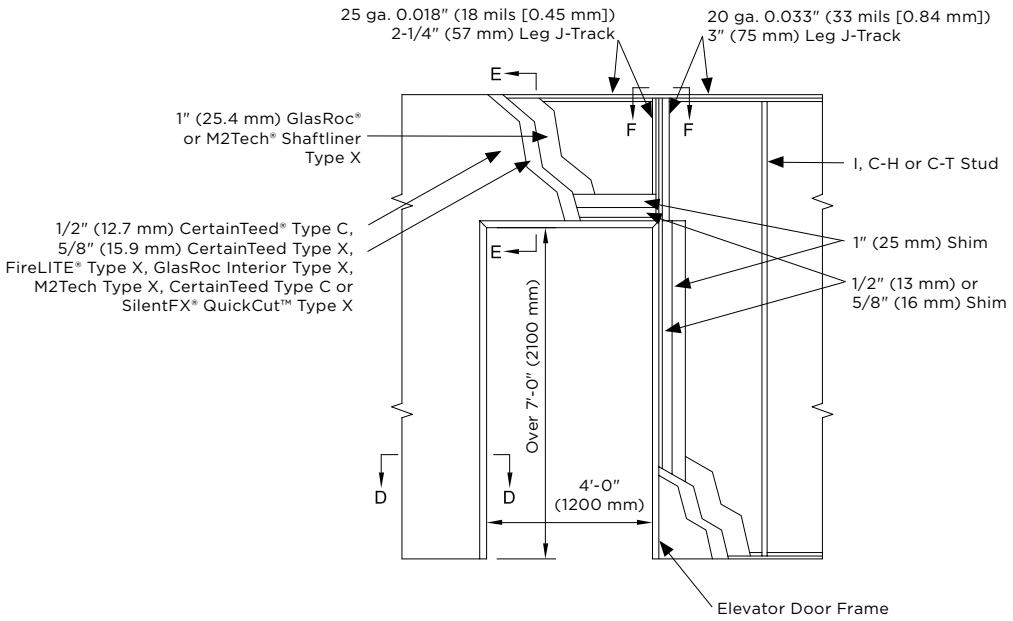



Section C-C

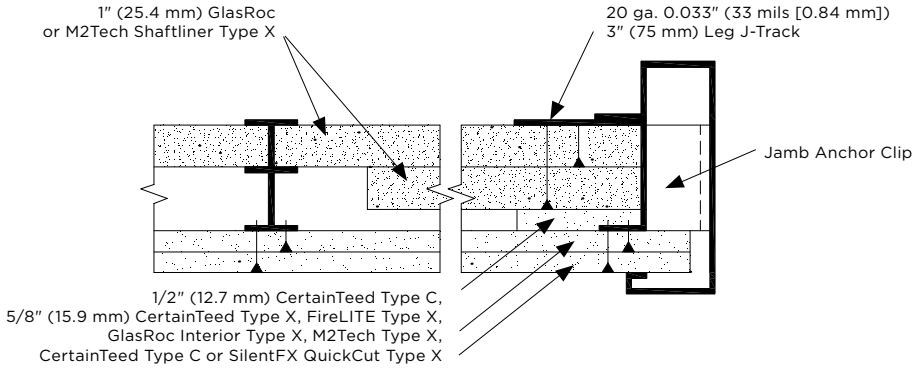
# Elevator Door Frames Over 7′ (2.13 m)

## Two Hour Details

### Elevator Door Framing

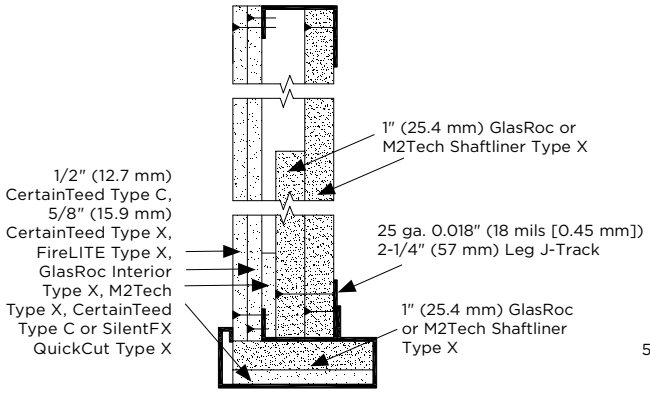



### Elevator Door Jamb

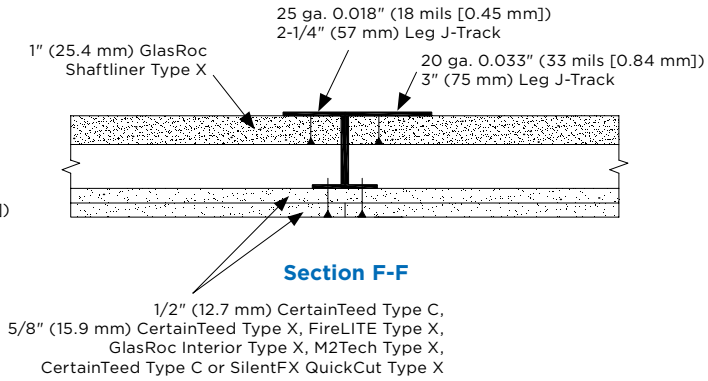



**Section D-D**

### Elevator Door Head




### J-Track Framing Above Elevator Door




**Section F-F**

1/2″ (12.7 mm) CertainTeed Type C,
5/8″ (15.9 mm) CertainTeed Type X, FireLITE Type X,
GlasRoc Interior Type X, M2Tech Type X,
CertainTeed Type C or SilentFX QuickCut Type X

# Horizontal Assemblies

## 1 and 2 Hour Fire Resistance Rating

### Fire Resistance Rated Assembly Designs

### Horizontal Shaftwall Assembly

Minimum 2-1/2″ (64 mm), 25 gauge 0.018″ (18 mils [0.45 mm]) thick, galvanized steel J-Track with unequal legs of 2″ (51 mm) and 1″ (25 mm) fastened to adjacent wall assembly with 1/2″ (13 mm) Type S screws, spaced 24″ (610 mm) o.c. J-Track attached with the 2″ (51 mm) leg is on the top and the 1″ (25 mm) leg on the bottom, facing the finished gypsum side of the ceiling.

1″ (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum boards are inserted between a minimum 2-1/2″ (64 mm), 25 gauge 0.018″ (18 mils [0.45 mm]) thick, I, C-H, or C-T Studs. GlasRoc or M2Tech Shaftliner Type X gypsum boards are cut 1″ (25 mm) shorter than the length of the J-Track to J-Track spacing. Corners of the GlasRoc or M2Tech Shaftliner Type X gypsum boards are secured to the J-Track with 1-5/8″ (41 mm) Type S Screws.

Two layers of 5/8″ (15.9 mm) CertainTeed® Type X or M2Tech® Type X gypsum board are installed on the open stud face with the first layer installed at right angles to the I, C-H, or C-T Studs with 1″ (25 mm) Type S screws spaced 12″ (305 mm) o.c., starting 1-1/2″ (38 mm) from side joints. Butt joint screws 1/2″ (13 mm) from the joint edge. Butt joints are staggered a minimum of 6′ (1830 mm) o.c. The second layer installed at right angles to the I, C-H, or C-T Studs with 1-5/8″ (41 mm) o.c. Type S screws at 12″ (305 mm) o.c., starting 1-1/2″ (38 mm) o.c. Butt joint screws 1/2″ (13 mm) from the joint edge. Butt joints are staggered a minimum of 24″ (610 mm) o.c.

Unsupported length of studs should not exceed 96″ (2438 mm) in length.

**For spans exceeding 96″ (2438 mm) in length, support is required by a suspension method as follows:**

Minimum 4.1 mm thick (8 gauge) steel wire, spaced 24″ (610 mm) o.c., hung from holes punched in a minimum 6″ (152 mm), 25 gauge 0.018″ (18 mils [0.45 mm]) thick, galvanized C-Channel with minimum 1-1/4″ (32 mm) legs and attached to a suitable supporting structure. The above referenced J-Track is secured to both sides of the C-Channel with 1/2″ (13 mm) Type S screws, spaced 24″ (610 mm) o.c. Minimum 2″ (51 mm) thick, 6″ (152 mm) wide mineral wool insulation placed on the surface of the 1″ (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum boards and along the full length of the C-Channel.

(Non-Loadbearing)

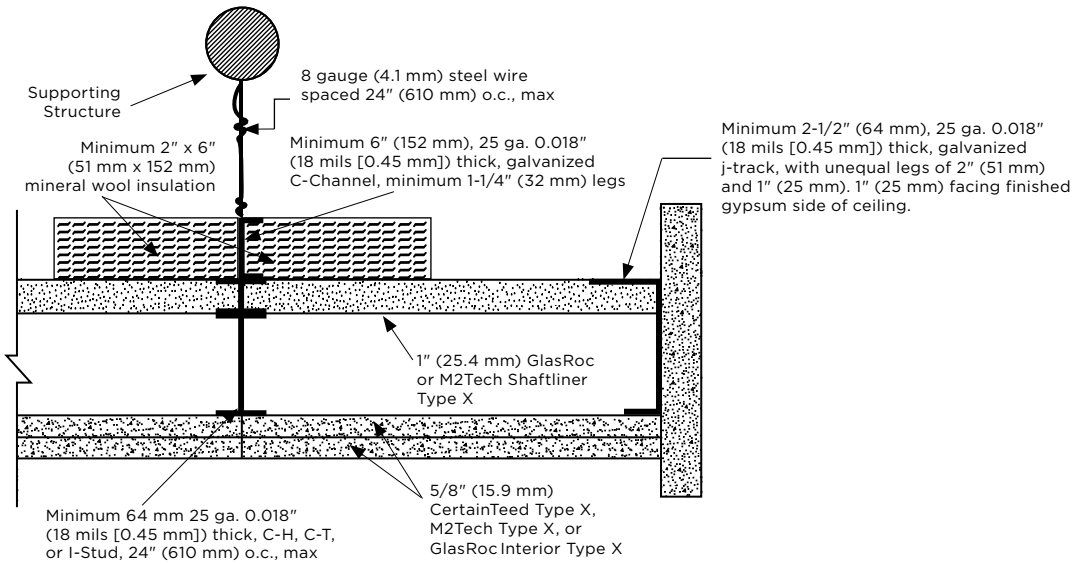
**1 Hour Fire-Rated**

Horizontal Shaftwall Assembly

**Fire Test**
UL/cUL I515

**Rated for fire from both sides, refer to test report for additional insulation requirements**

### Front View

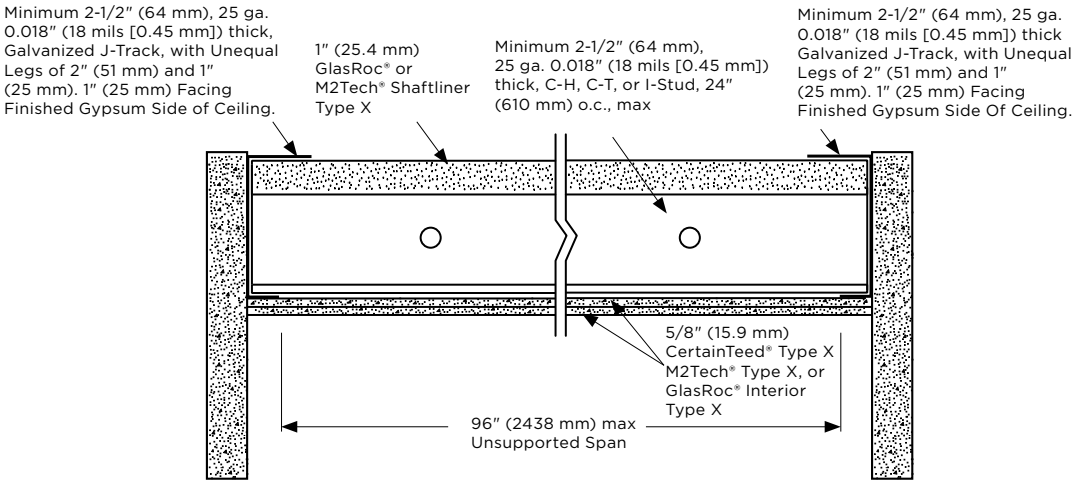


# Horizontal Assemblies

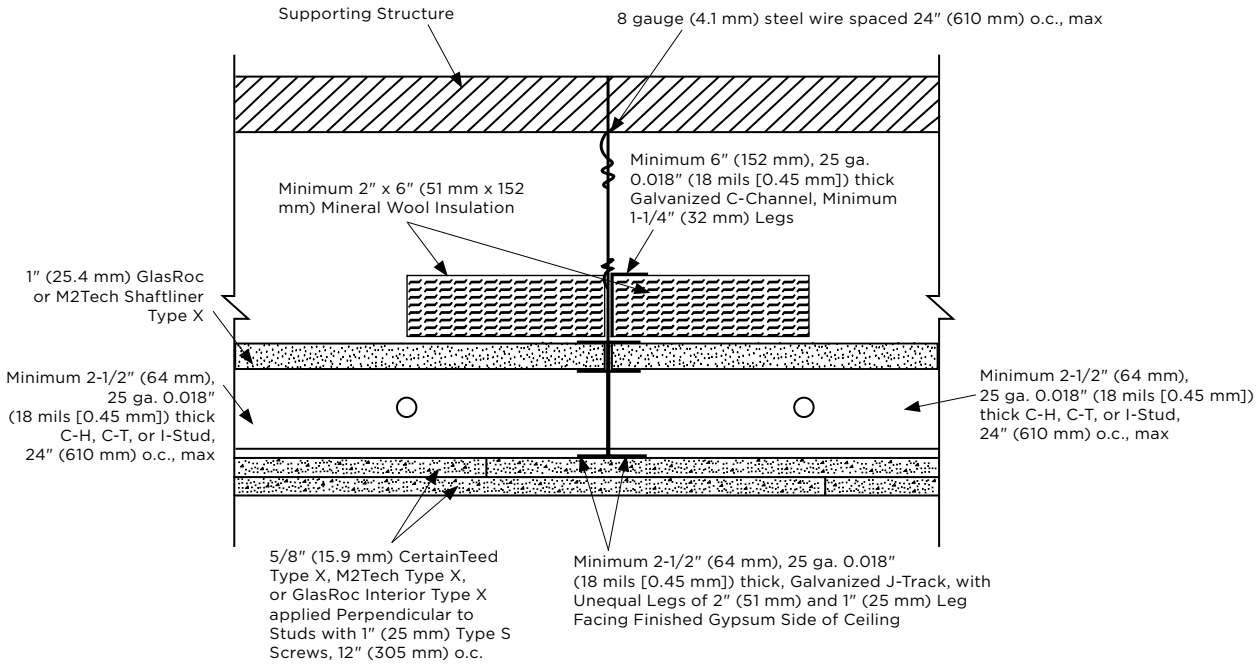
## 1 and 2 Hour Fire Resistance Rating

### Fire Resistance Rated Assembly Designs

#### Side View (if 96" [2438 mm] or less clear span)




#### Side View (if over 96" [2438 mm] clear span)



# Horizontal Systems

## 1 and 2 Hour Fire Resistance Rating

## Fire Resistance Rated Assembly Designs

### Horizontal Shaftwall Assembly

Minimum 2-1/2" (64 mm), 20 ga. 0.033" (33 mils [0.84 mm]), galvanized steel J-Track with unequal legs of 2" (51 mm) and 1" (25 mm) fastened to adjacent wall assembly with 1/2" (13 mm) Type S screws, spaced 24" (610 mm) o.c. J-Track attached with the 2" (51 mm) leg is on the top and the 1" (25 mm) leg on the bottom, facing the finished gypsum side of the ceiling.

1" (25.4 mm) GlasRoc® or M2Tech® Shaftliner Type X gypsum boards are inserted between a minimum 2-1/2" (64 mm), 0.033" (33 mils [0.84 mm]) thick, I, C-H, or C-T Studs. GlasRoc or M2Tech Shaftliner Type X gypsum boards are cut 1" (25 mm) shorter than the length of the J-Track to J-Track spacing. Corners of the GlasRoc or M2Tech Shaftliner Type X gypsum boards are secured to the J-Track with 1-5/8" (41 mm) Type S Screws.

Three layers of 5/8" (15.9 mm) CertainTeed® Type C gypsum board are installed on the open stud face with resilient channel between the 2nd layer and 3rd (face) layer. The first layer installed at right angles to the C-H, I or C-T Studs with 1" (25 mm) Type S screws spaced 12" (305 mm) o.c., starting 1-1/2" (38 mm) from side joints. Butt joint screws 1/2" (13 mm) from the joint edge. Butt joints are staggered a minimum of 6' (1830 mm) o.c. The second layer installed at right angles to the C-H, I or C-T Studs with 1-5/8" (41 mm) o.c. Type S screws at 12" (305 mm) o.c., starting 1-1/2" (38 mm) o.c. Butt joint screws 1/2" (13 mm) from the joint edge. Butt joints are staggered a minimum of 24" (610 mm) o.c. 20 ga. 0.033" (33 mils [0.84 mm]) thick Resilient channel installed 16" (406 mm) o.c., perpendicular to the C-H, I or C-T Studs with 1-5/8" (41 mm) Type S bugle head screws, spaced 12" (305 mm) o.c. Resilient Channels overlapped 4" (102 mm) at splices. Two channels spaced 4" (102 mm) o.c., oriented opposite at each gypsum panel butt joint. The third layer (face layer) installed parallel to the direction of the C-H, I or C-T Studs to the resilient channels with 1" (25 mm) Type S screws spaced 12" (305 mm) o.c. Butt joint screws 1/2" (13 mm) from the joint edge. Butt joints are staggered a minimum of 24" (610 mm) o.c.

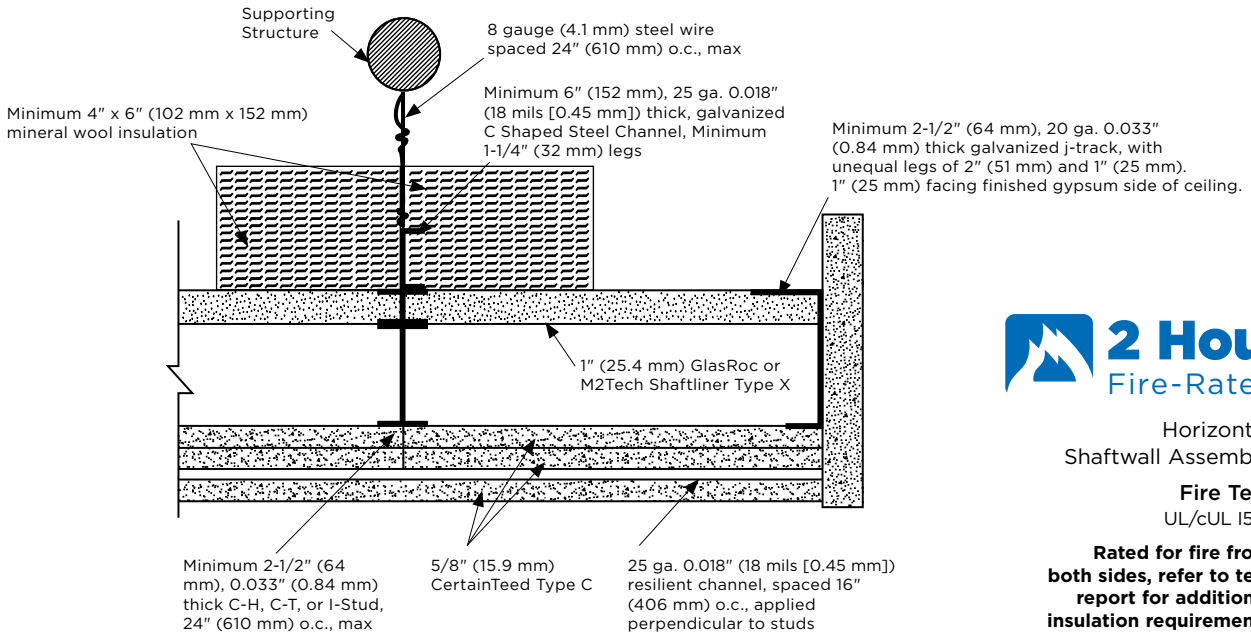
Nominal 4" (102 mm) x 6" (152 mm) wide mineral wool placed over the surface of the Studs and J-Track. Mineral wool should cover all visible metal surfaces.

Unsupported length of studs should not exceed 96" (2438 mm) in length.

**For spans exceeding 96" (2438 mm) in length, support is required by a suspension method as follows:**
Minimum 4.1 mm thick (8 gauge) steel wire, spaced 24" (610 mm) o.c., hung from holes punched in a minimum 6" (152 mm), 18 mils (0.45 mm) galvanized C-Channel with minimum 1-1/4" (32 mm) legs and attached to a suitable supporting structure. The above referenced J-Track is secured to both sides of the C-Channel with 1/2" (13 mm) Type S screws, spaced 24" (610 mm) o.c. Nominal 4" (102 mm) thick, 6" (152 mm) wide mineral wool insulation placed on the surface of the 1" (25.4 mm) GlasRoc or M2Tech Shaftliner Type X gypsum boards and along the full length of the C-Channel, Studs and J-Track. Mineral wool should cover all visible metal surfaces.

(Non-Loadbearing)

### Front View




**2 Hour Fire-Rated**

Horizontal Shaftwall Assembly

**Fire Test**
UL/cUL I515

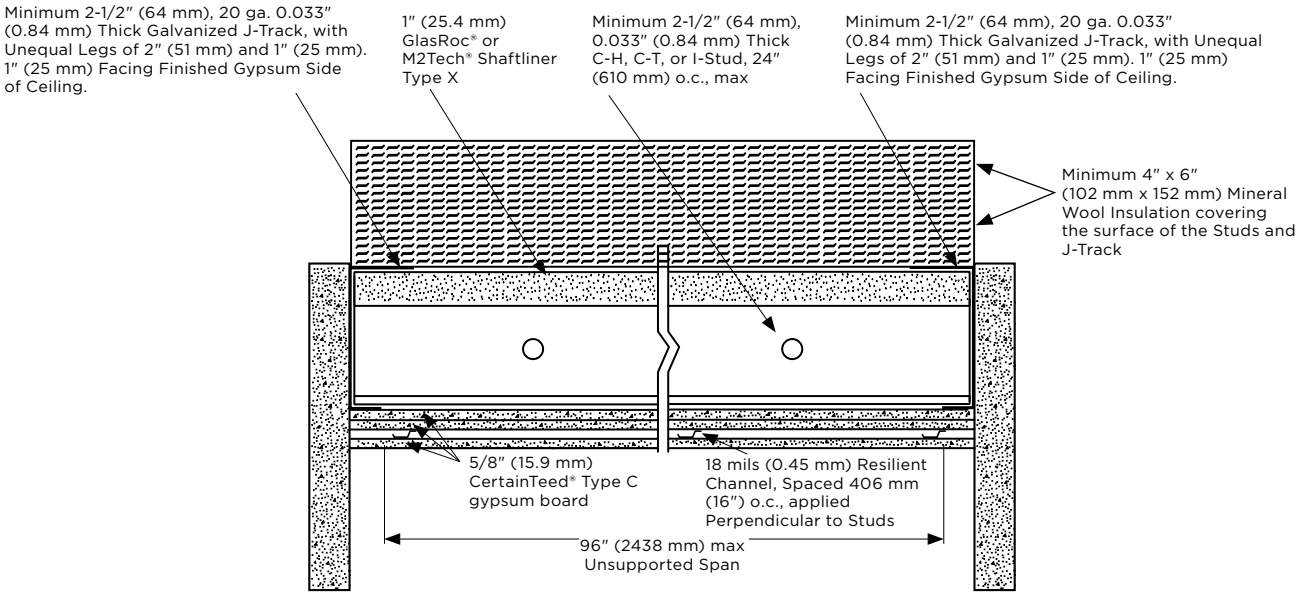
**Rated for fire from both sides, refer to test report for additional insulation requirements**

# Horizontal Assemblies

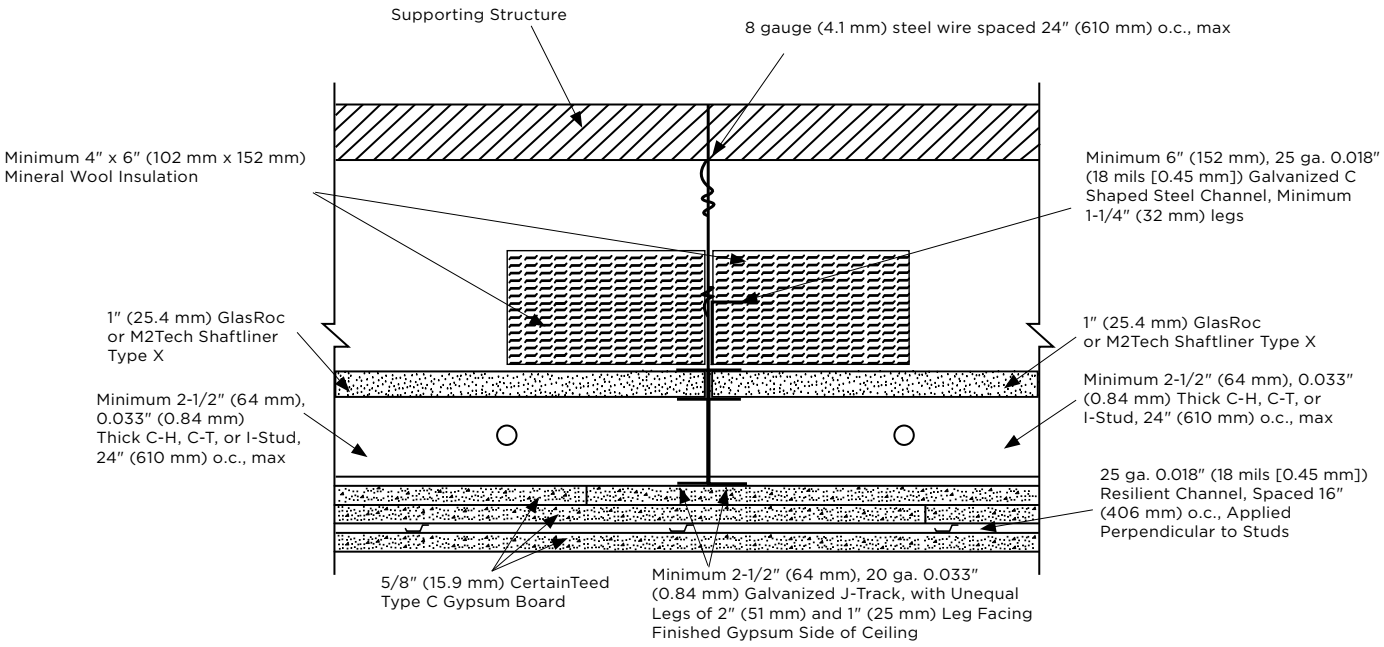
## 1 and 2 Hour Fire Resistance Rating

### Fire Resistance Rated System Designs

#### Side View (if 96" [2438 mm] or less clear span)




#### Side View (if over 96" [2438 mm] clear span)



# Horizontal Assemblies

## 1 and 2 Hour Fire Resistance Rating

## Fire Resistance Rated Assembly Designs

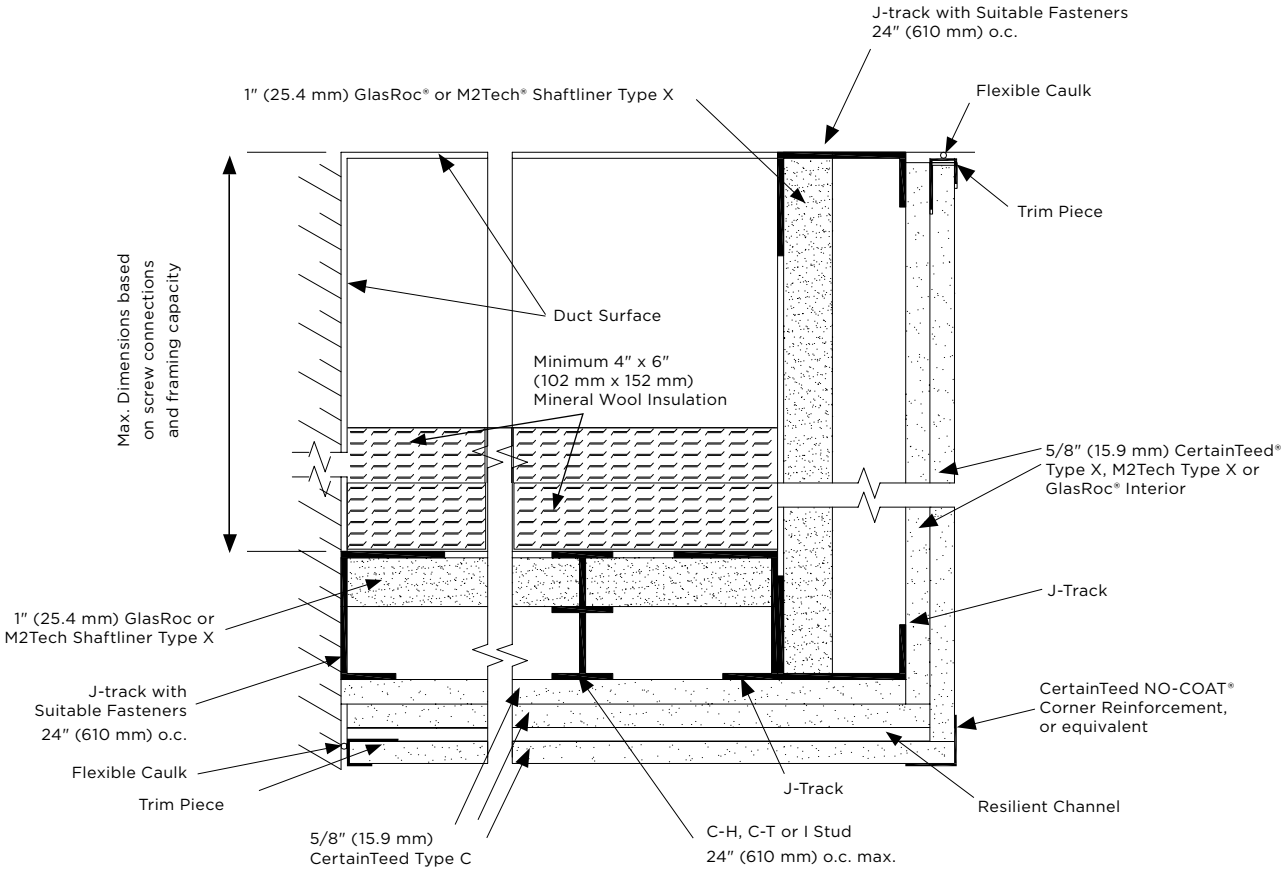
### Horizontal Membrane for Duct Enclosure

**2 Hour**
Fire-Rated

Horizontal Membrane for Duct Enclosure

**Fire Test**
FIRE: UL I515

cUL U417/ULC W446, Assemblies A or C (Vertical Section)




**Maximum 96" (2440 mm) Unsupported Horizontal Span**

**Horizontal Duct Enclosure**


Gypsum shaftwall systems have replaced traditional masonry for interior vertical enclosures like mechanical and elevator enclosures, stairwells, and other mechanical chases. GlasRoc® Shaftliner is ideal for use in commercial shaftwall systems, delivering lightweight construction, thinner walls, easy installation and clean up, and cost-effective construction.

# Architectural Specifications

## Section 09 21 16.23
## Gypsum Panel Shaftwall Assemblies

### Part 1–General

#### 1.1 Project Described

Non-loadbearing one, two, three, or four hour fire resistance rated shaftwall assemblies, staircase enclosures, or other mechanical enclosures.

#### 1.2 Qualifications

All gypsum materials used in the described assembly installations shall be manufactured by CertainTeed and carry CertainTeed 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-Stud, C-H Stud or C-T Stud 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 assembly 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

GlasRoc® and CertainTeed® gypsum panels 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 gypsum panels dry prior to installation. Do not use shipping bags for outdoor storage of material.

#### 1.5 Installation Environment

Gypsum panels must not be used in areas that are continuously or repeatedly exposed to excessive moisture or 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 (10°C) 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 C840, the GA-216, GA-600, and CertainTeed Joint Compound manufacturer's instructions. Joint Compound shall comply with ASTM C475. No finishing is required on the shaft side of partitions.

For further technical information regarding fire resistance refer to the following reports:

**Vertical Shaftwalls**
UL/cUL U417, U428, U429, U438, U469, U505, U529, V433, V470, W409, W437, W453, W471, ULC W446

**Horizontal Shaftwalls**
UL/cUL I515

### Part 2–Products

#### 2.1 Materials

A. Steel Framing

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

A-1. Stud Form

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

A-2. Stud Width

Galvanized I , C-H or C-T Studs are available in widths of 2-1/2", 4", and 6" (64 mm, 102 mm and 152 mm).

A-3. Stud Thickness

Studs are manufactured from steel having minimum design steel thicknesses from 0.0188" to 0.0451" (0.478 mm to 1.146 mm).

A-4. Stud Coating

Studs have a G40 or G60 galvanized coating.

B. Fasteners

1-5/8" (41 mm) long No. 6 Type S screws, 1" (25 mm) long No. 6 Type S buglehead screws, 3/8" (10 mm), long Type S panhead screws.

C. CertainTeed Gypsum Panel Products

C-1. GlasRoc or M2Tech Shaftliner Type X 1" (25.4 mm) thick

C-2. CertainTeed Type C 1/2" (12.7 mm) thick

C-3. CertainTeed or M2Tech Type X 5/8" (15.9 mm) thick

C-4. SilentFX Quick Cut Type X 5/8" (15.9 mm) thick

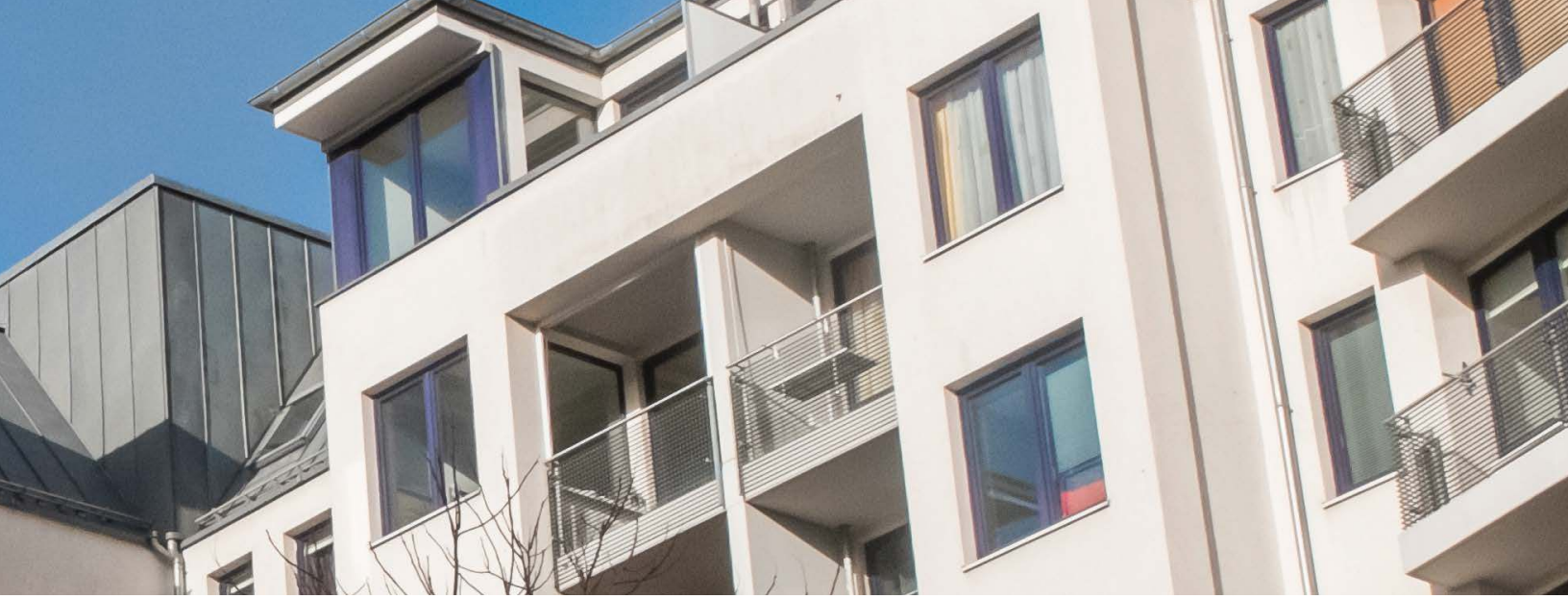
C-5. CertainTeed® Type C 5/8" (15.9 mm) thick

C-6. FireLITE® Type X 5/8" (15.9 mm) thick

C-7. GlasRoc® Interior Type X 5/8" (15.9 mm) thick

C-8. Extreme Abuse 5/8" (15.9 mm) thick

C-9. Extreme Impact 5/8" (15.9 mm) thick



D. CertainTeed Joint Finishing

D-1 CertainTeed Brand Ready Mixed Joint Compound
D-2 CertainTeed Brand Joint Tape
D-3 M2Tech® 90 Setting Compound
D-4 CertainTeed LiteSand Setting Compound

E. CertainTeed High Performance Corners

F. Acoustical Sealant

G. CertainTeed Glass Fibre Insulation, or equivalent.

H. Resilient Channels

## Part 3–Installation

### 3.1 Construction Briefs

**General**

Construction consists of steel studs and tracks faced on one side with GlasRoc or M2Tech Shaftliner Type X and on the opposite side with, one or two (depending on the application specifications) layers of either 1/2″ (12.7 mm) CertainTeed Type C, 5/8″ (15.9 mm) CertainTeed Type X, FireLITE Type X, GlasRoc Interior Type X, or M2Tech Type X gypsum panel. The following steps pertain to one or two 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″ (610 mm) o.c.
3. Attach J-Track to the floor with fasteners spaced at 24″ (610 mm) o.c.
4. Install GlasRoc or M2Tech Shaftliner Type X gypsum panels vertically. The leading edge of the first panel must be attached to the long leg of the vertical J-Track with 1-5/8″ (41 mm) Type S screws spaced 12″ (305 mm) o.c. or by using the tabs in the J-track. Secure the top and bottom edges using the same fasteners and spacing, filling the stud cavity with CertainTeed Glass Fibre Insulation, or equivalent.
5. Friction fit an I, C-H or C-T Stud into the top and bottom tracks and slide it snugly against the GlasRoc or M2Tech Shaftliner Type X gypsum panel. Make sure the edge of the panel is in full contact with the center web of stud and covered by all of the tabs.
6. Place the next GlasRoc or M2Tech Shaftliner Type X gypsum panel between the tabs and flange on the opposite side of the I, C-H or C-T Stud with no screw attachments required.
7. Install subsequent GlasRoc or M2Tech Shaftliner Type X gypsum panels and I, C-H or C-T Stud in the same manner. Check periodically to ensure they are plumb.
8. When wall height exceeds GlasRoc or M2Tech Shaftliner Type X panel length, GlasRoc or M2Tech Shaftliner Type X may be butted to extend to the full height of the wall. Horizontal joints do not need to be staggered or backed by steel framing.
9. Frame all cut openings in the shaft side with J-Track, providing adequate structural support for openings over 48″ (1220 mm).
10. 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″ (15.9 mm) CertainTeed Type X, FireLITE Type X, GlasRoc Interior Type X, M2Tech Type X, or 1/2″ (12.7 mm) CertainTeed Type C with gypsum panel with 1″ (25 mm) Type S screws for one hour rated applications. Apply a second layer with 1-5/8″ (41 mm) Type S screws for two hour rated applications, and a third layer with 2-1/4″ (57 mm) 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 panel firmly against the framing, begin fastening in the center of each sheet and move outward to ends and edges.
3. Set fastener heads slightly below the surface without breaking the face paper or damaging the gypsum core.
4. Install sheets in a brick pattern with all ends supported by framing members.

For finishing both sides, apply a single layer of 5/8″ (15.9 mm) CertainTeed Type X, FireLITE Type X, GlasRoc Interior Type X, M2Tech Type X, or 1/2″ (12.7 mm) CertainTeed Type C vertically over GlasRoc or M2Tech Shaftliner Type X gypsum panel with 1″ (25 mm) Type S screws. For sound rated partitions follow instructions that include filling the stud cavity with CertainTeed Glass Fibre Insulation or equivalent insulation and installation of finish side board onto resilient furring channels.


# Innovative Building Solutions

**CertainTeed provides innovative building products and systems for commercial, institutional and residential designs. With over 80 years of experience manufacturing and marketing in North America, CertainTeed Gypsum is committed to focusing on quality, service, and safety to provide a superior experience to its customers.**

## Test Standards

Fire resistance and sound tests are conducted in accordance with CAN/ULC 102 and ASTM E90, respectively, and no warranty is made other than conformance to the standard under which the assembly was tested. Minor discrepancies may exist in the values of ratings, attributable to changes in materials and standards, as well as differences between testing facilities. Assemblies are listed as "combustible" (wood framing) and "noncombustible" (concrete and/or steel construction).

## Combustible Assemblies

These include all wood stud walls, wood joist or truss ceilings and floors consisting of tongue-and-groove, plywood, or OSB sub-flooring and finish flooring or a poured gypsum floor underlayment over wood structural panel sub-flooring. Floor assembly may be used over the wood joists with ceilings as detailed in GA and UL/cUL/ULC references.

## Noncombustible Assemblies

These include steel studs, bar joist ceilings with poured concrete floors over metal lath or steel. Also included are steel beams and steel columns. Ceilings for all 1-hour, 1-1/2-hour, and 2-hour noncombustible floor and ceiling assemblies with 2" (51 mm) or 2-1/2" (64 mm) concrete floor or metal lath over steel bar joists, unless otherwise specified, may be directly attached or suspended as detailed in GA and UL/cUL/ULC references.

## Fire Resistance

CertainTeed® Type X and Type C, M2Tech® Type X, SilentFX® QuickCut™ Type X, GlasRoc® Tile Backer Type X, FireLITE® Type X GlasRoc Shaftliner Type X, GlasRoc Interior Type X and GlasRoc Sheathing Type X products are Classified by Underwriters Laboratories Inc. and Listed by Underwriters Laboratories of Canada and carries the UL/cUL/ULC Label for 1-, 2-, 3- and 4-hour Fire Resistance in various designs. Underwriters Laboratories Inc. tests

have proven that joint finishing is not required for the rating in certain assemblies using Type X and Type C products. For fire resistance ratings, refer to GA-600, *Fire Resistance and Sound Control Design Manual*, and the UL, cUL and ULC Fire Resistance Directories.

## Surface Burning Characteristics

CertainTeed® Gypsum Panels have Flame Spread ratings of 0 to 15 and Smoke Developed ratings of 0 to 5, and GlasRoc® products have Flame Spread Ratings of 0 and Smoke Developed Ratings of 0 in accordance with ASTM E84 (UL 723) and CAN/ULC 102.

## Sound Characteristics

The degree to which assemblies block the passage of sound is measured by Sound Transmission Class (STC) per ASTM E90 and E413, which is a single figure rating derived from the sound transmission loss values over a range of sound frequencies. All sound-rated assemblies require acoustical sealant at assembly perimeters and penetrations, and other locations where sound leaks may develop. For sound characteristics, refer to GA-600, *Fire Resistance and Sound Control Design Manual*.

## Storage

Gypsum panels must be stored in an area that protects it from adverse weather conditions, condensation and other forms of moisture and direct sunlight. Panels should be neatly stacked flat with care taken to prevent sagging or damage to edges, ends, and surfaces. Storing panels lengthwise leaning against the framing is not recommended. Panels should be carried, not dragged, to place of installation to prevent damaging finished edges. Refer to GA-801, *Handling and Storage of Gypsum Panel Products*.

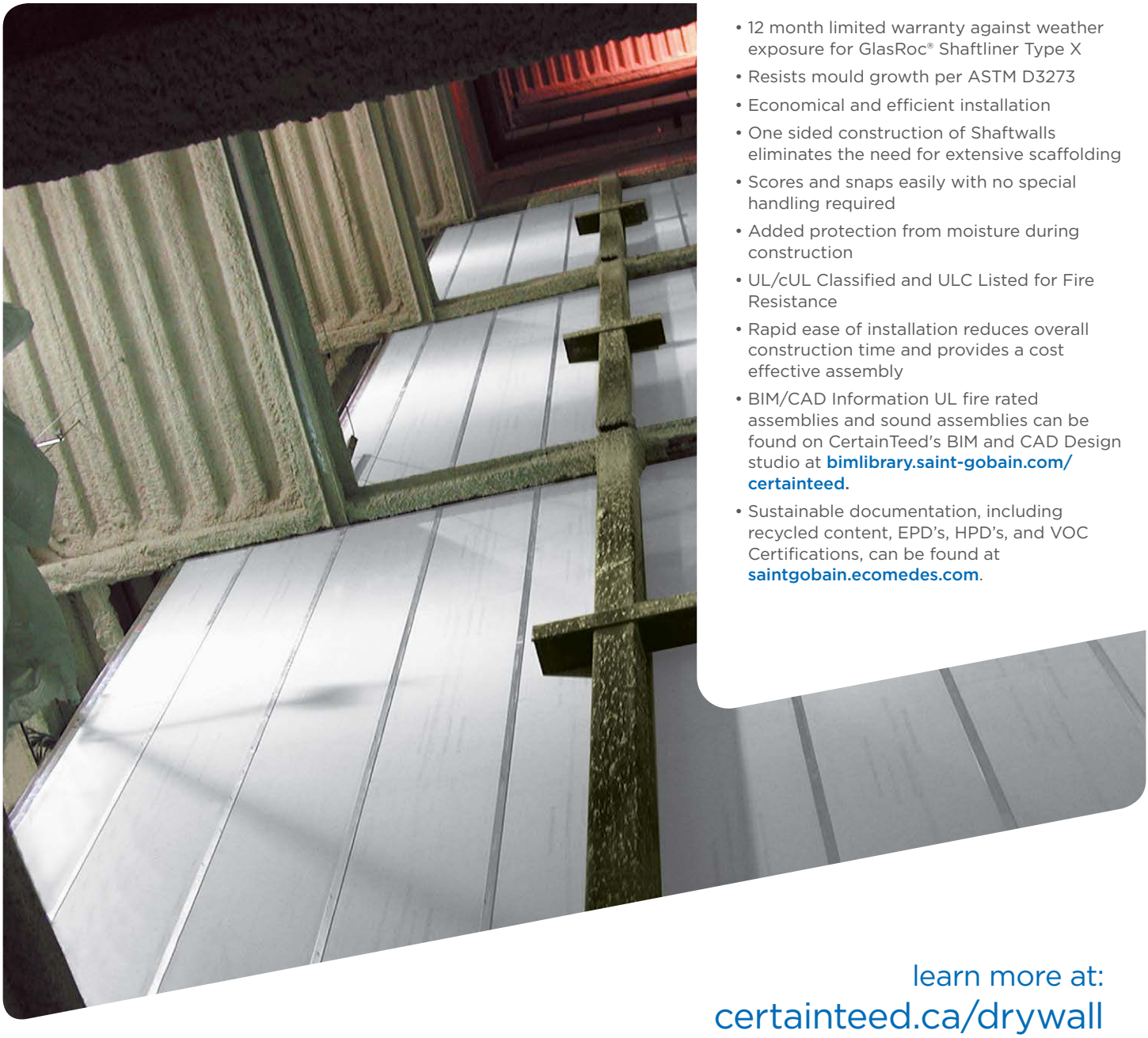
## More Information

Consult the Gypsum Association publication GA-216, *Application and Finishing of Gypsum Panel Products,* for detailed application and finishing procedures. For full details of fire and sound ratings, consult test references listed for system assemblies.

# GlasRoc® Shaftliner Type X

# M2Tech® Shaftliner Type X

certainteed
SAINT-GOBAIN



- 12 month limited warranty against weather exposure for GlasRoc® Shaftliner Type X
- Resists mould growth per ASTM D3273
- Economical and efficient installation
- One sided construction of Shaftwalls eliminates the need for extensive scaffolding
- Scores and snaps easily with no special handling required
- Added protection from moisture during construction
- UL/cUL Classified and ULC Listed for Fire Resistance
- Rapid ease of installation reduces overall construction time and provides a cost effective assembly
- BIM/CAD Information UL fire rated assemblies and sound assemblies can be found on CertainTeed's BIM and CAD Design studio at **bimlibrary.saint-gobain.com/certainteed.**
- Sustainable documentation, including recycled content, EPD's, HPD's, and VOC Certifications, can be found at **saintgobain.ecomedes.com**.

learn more at:
certainteed.ca/drywall

SMART EPD



USGBC MEMBER

MEMBER



hpd VERSION 2.3

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

UL GREENGUARD PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818 GOLD

SAINT-GOBAIN

**CertainTeed Canada**

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