The 3-hour Area Separation Wall System is a 3-hour fire wall consisting of two layers of 1 in. (25.4 mm) shaftliner panels friction-fit between 2 in. (50.8 mm) light-gauge steel H-Studs and a layer of 5/8" Fire-Shield C gypsum board fastened to each side of the studs.

The steel H-Studs are attached to adjacent framing on each side with heat-softenable, aluminum break-away clips (ASW clips) that allow for collapse of the fire-exposed unit without collapse of the Area Separation Wall.

**Typical Floor/Ceiling Juncture**

1. H-Stud
2. Two Layers 1" Shaftliner XP
3. 5/8" XP Fire-Shield Type C Each Side
4. Stud Framing
5. Gypsum Board
6. Double C-Track (Back to Back)
7. Bottom Plate
8. ASW Clip
9. Rim Joist
10. Top Plate
11. Subfloor
Description

National Gypsum Company produces three shaftliner products for use in the 3-hour Area Separation Wall System:

**Gold Bond® brand Fire-Shield® Shaftliner** consists of a fire resistant Type X gypsum core encased in a heavy, moisture-resistant, green paper that is made from 100-percent recycled content.

**Gold Bond® brand XP® Shaftliner** consists of a mold-, mildew-, moisture- and fire-resistant Type X gypsum core encased in a specially designed PURPLE® paper that offers superior resistance to mold and mildew.

**Gold Bond® brand eXP® Shaftliner** consists of a fire-resistant Type X gypsum core encased in a coated, specially designed PURPLE® fiberglass mat facer for superior mold, mildew, and moisture resistance.

National Gypsum Company produces three gypsum boards for use in the 3-hour Area Separation Wall System:

**Gold Bond® brand Fire-Shield® C Gypsum Board** has a specially formulated Type X core to achieve superior performance when used in specific fire-rated assemblies.

**Gold Bond® brand XP® Fire-Shield® C Gypsum Board** consists of a mold-, mildew-, moisture- and fire-resistant Type X gypsum core with a specially designed PURPLE® paper. The heavy PURPLE® face paper and the gray back paper are 100 percent recycled and are resistant to mold, mildew and moisture.

**Gold Bond® brand eXP® Interior Extreme® Type C Gypsum Panels** consist of a moisture- and mold-resistant Type X gypsum core encased in a coated, specially designed fiberglass mat on the face, back and sides. The glass mat is folded around the long edges to reinforce and protect the core.

The H-Studs are installed vertically and secured by the flanges of the C-Track. The same track is used back-to-back at intermediate floors to provide a splicing means so that the system can be erected one floor at a time. C-Tracks are also used at the roof line or at the parapet and at the ends of walls.

Wood- or steel-stud flanking walls on each side of the Area Separation Wall System can be load-bearing or non-load-bearing and can accommodate mechanical, electrical and plumbing systems. Install mineral wool or glass fiber insulation to provide higher STC ratings.

Technical Data

The 3-Hour Area Separation Wall System is listed in the UL Fire Resistance Directory as Design No. W454.

The 3-Hour Area Separation Wall System may be built up to a maximum of 70 ft. (21.3 m) high.

The 3-Hour Area Separation Wall System should not be used where exposed to constant dampness and/or water.

Although steel framing and eXP Gypsum Board products can withstand temporary exposure to moisture during construction, protect the completed wall system as soon as possible.

Protect insulation in the flanking walls from getting wet. Do not install until the building is enclosed.

Materials supplied to the job site should be stored properly, supported off the ground and protected from inclement weather.

Installation

1. Attach 2 in. (50.8 mm) C-Tracks to the top of the foundation 5/8 in. (19.1 mm) minimum from the adjacent framed wall with fasteners spaced 24 in. (610 mm) o.c. Apply acoustical sealant along edges of track to minimize sound transmission.

2. Install C-Track on the ends of stepped foundation walls aligned with the Area Separation Wall, if applicable, with fasteners 24 in. (610 mm) o.c. Caulk edges as with the floor track.
AREA SEPARATION WALL LIMITING HEIGHTS

1. Roof
2. H-Stud
3. Two Layers 1" Shaftliner XP®
4. 5/8" XP® Fire-Shield C Board
5. ASW Clip
6. Double C-Track (Back-to-Back)
7. Top Plate
8. Stud
9. Blocking
10. XP® Gypsum Board
11. Bottom Plate
12. Rim Joist
13. Finish Floor
14. Subfloor
15. Concrete Slab

For walls up to 70’, space clips a maximum of 5’ o.c.
3. At the intersection of foundation and the exterior wall, begin erecting Area Separation Wall by inserting first layer of 1 in. (25.4 mm) Shaftliner into C-Track. Insert second layer back-to-back with first layer and seat into C-Track. Shaftliner and studs may be set into position from the basement floor or fed down through the space provided between the wood framing from the floor above. Cap the terminating edge of the Shaftliner panels with a vertical C-Track at the end of the foundation and fasten to the floor track with 3/8 in. (9.5 mm) Type S pan-head screws.

4. Insert an H-Stud into the C-Track and engage the H-Stud flanges over the long edges of the Shaftliner panels, making sure that both pieces of Shaftliner are seated all the way into the C-Tracks and that their edges are flush. Seat the H-Stud fully so the board edges contact the stud web.

5. Continue in this manner, alternating two layers of Shaftliner and H-Studs with the flanges of the H-Studs engaging the Shaftliner edges until wall is completed. Again, make sure all studs and panels are tightly pushed together. H-Studs may be fastened to C-Track with 3/8 in. (9.5 mm) pan-head screws to assist with installation.

6. Where the Area Separation Wall forms a corner, cap the ends of the Shaftliner panels with a vertical C-Track and fasten to the floor track with 3/8 in. (9.5 mm) pan-head screws. Fasten a C-Track to the foundation or floor at a right angle to the installed Area Separation Wall with fasteners 24 in. (610 mm) o.c. Fasten the web of another vertical C-Track to the flange of the installed vertical C-Track with 3/8 in. (9.5 mm) pan-head screws 24 in. o.c. to create the corner. Continue installing shaftliner panels and H-Studs in a progressive manner.

7. If the Area Separation Wall terminates at a foundation wall, the last two Shaftliner panels will have to be inserted from the floor above. Boards are pushed down into the channel formed by the flanges of the previous H-Stud and the flanges of the wall track.

8. If the Area Separation Wall terminates at or past a framed wall, insert the last Shaftliner panels and cap the end of the Area Separation Wall with 2 in. (50.8 mm) C-Track. Fasten C-Track flanges at all corners on both sides with 3/8 in. (9.5 mm) Type S pan-head screws.

9. Where one dwelling unit extends past the adjacent unit, terminate the Area Separation Wall at the end of the common wall and construct a 1-hour wall to the farthest point of the building.

10. Where one unit extends vertically past the adjacent unit, terminate the Area Separation Wall at the roof sheathing of the lower unit and construct a 1-hour wall to the roof sheathing of the upper unit.

11. Cap the top edge of the erected wall with 2 in. (50.8 mm) C-Track over studs and Shaftliner. C-Track may be fastened to H-Studs with 3/8 in. (9.5 mm) Type S pan-head screws to assist with installation.

12. Where another Area Separation Wall intersects the installed Area Separation Wall, fasten a C-Track to the foundation or floor at a right angle to the installed Area Separation Wall with fasteners 24 in. (610 mm). Attach the web of a vertical C-Track to the flange of an H-Stud with 3/8 in. (9.5 mm) pan-head screws 24 in. (610 mm) o.c. Continue installing shaftliner panels and H-Studs in the same manner.

13. Apply one layer of 5/8 in. Fire-Shield C Gypsum Board horizontally or vertically to each side of the H-Studs with 1 in. Type S screws 16 in. (406 mm) o.c.

14. Clip the Area Separation Wall to adjacent framing with ASW Clips 5 ft. o.c. Fasten the clips to the H-studs through the 5/8 in. Fire-Shield C Gypsum Board with one 1-1/4 in. (31.8 mm) Type S screw through the short leg of the clip. Attach clips to adjacent framing with one 1-1/4 in. (31.8 mm) Type W screw for wood and Type S screws for steel.

15. Attach 2 in. (50.8 mm) C-Track to the installed track capping off the wall of the lower floor. This back-to-back track installation allows the Area Separation Wall to be erected one floor at a time. Secure the two tracks together with two 3/8 in. (9.5 mm) Type S pan-head Screws 24 in. (610 mm) o.c. Stagger back-to-back track joints a minimum of 12 in. (305 mm).
16. For applications where a floor overhangs the floor below, the C-Track can be cantilevered 24 in. (610 mm) from the C-Track capping the wall of the lower floor. A 36 in. (914 mm) cantilever can be achieved in the same manner when diagonal steel strapping is applied to each side of the wall.

17. For additional vertical sections, erect Shaftliner and H-Studs in the same manner as the basement wall, steps 4-14, except that starting and ending procedures vary depending on the exterior wall intersection detail.

18. At the roof intersection, the walls are capped with C-Tracks abutting the underside of the roof sheathing. C-Tracks may be fastened to H-Studs with 3/8 in. (9.5 mm) Type S panhead screws to assist with installation. H-Studs are fastened to framing with ASW clips at the roof line.

19. Wood stud or steel stud walls flanking the Area Separation Wall may be finished in any method specified.

Recommendations

Order H-Studs and 1 in. Fire-Shield Shaftliner according to the following:

1. Basement wall section – length equal to distance from foundation to approximately 3 in. (76.2 mm) above the first floor line.

2. Intermediate floors – length equal to the distance between floor lines.

3. Top floor or attic – length to extend to the top of the parapet wall or to the roof intersection, depending on detail.
2 FT. CANTILEVER
1. 2" C-Track
2. 2" H-Stud
3. 1" Fire-Shield Shaftliner
4. Double C-Track (Back-to-Back)

3 FT. CANTILEVER
1. 2" C-Track
2. 2" H-Stud
3. 1" Fire-Shield Shaftliner
4. Diagonal Steel Strap
5. Double C-Track (Back-to-Back)

CORNER DETAIL
1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. 5/8" Fire-Shield C Gypsum Board
5. 1" Fire-Shield Shaftliner
6. 2" C-Track
7. 2" H-Stud
8. ASW Clip

4-WAY INTERSECTION DETAIL
1. Gypsum Board
2. 2x4 Wood Stud
3. Insulation
4. 5/8" Fire-Shield C Gypsum Board
5. 1" Fire-Shield Shaftliner
6. 2" H-Stud
7. 2" C-Track
**ROOF JUNCTION DETAIL**

1. Roof Deck
2. 2x2 Wood Ledger
3. 2” C-Track
4. 5/8” Fire-Shield Gypsum Board, 4” Each Side When Roof Deck is Not Constructed With Fire-Retardant Treated Wood.
5. ASW Clip
6. 5/8” Fire-Shield C Gypsum Board
7. 1” Fire-Shield Shaftliner

**EXTERIOR WALL JUNCTION DETAIL**

1. Siding
2. 5/8” Fire-Shield Gypsum Sheathing, 4” Each Side
3. Insulation
4. 2x4 Wood Stud
5. 2” C-Track
6. 5/8” Fire-Shield C Gypsum Board
7. 1” Fire-Shield Shaftliner
8. ASW Clip
9. 2” H-Stud
10. Gypsum Board

**FOUNDATION DETAIL**

1. Gypsum Board
2. 2x4 Wood Plate
3. Insulation
4. 5/8” Fire-Shield C Gypsum Board
5. 1” Fire-Shield Shaftliner
6. Sealant
7. 2” C-Track
8. Fasteners 24” o.c. Max.

**ROOF PARAPET DETAIL**

1. Roof Deck
2. 2” C-Track
3. 5/8” Fire-Shield C Gypsum Board
4. 1” Fire-Shield Shaftliner
5. ASW Clip

**EXTERIOR WALL INTERSECTION DETAIL**

1. Siding
2. Sheathing
3. Insulation
4. 2x4 Wood Stud
5. 2” C-Track
6. 5/8” Fire-Shield C Gypsum Board
7. 1” Fire-Shield Shaftliner
8. ASW Clip
9. 2” H-Stud
10. Gypsum Board

**FLOOR INTERSECTION DETAIL**

1. Subfloor
2. Sealant
3. 2” Wood Plate
4. Gypsum Board
5. Insulation
6. Rim Joist
7. 5/8” Fire-Shield C Gypsum Board
8. 1” Fire-Shield Shaftliner
9. ASW Clip
10. 2x4 Wood Stud
11. Ceiling