H-Stud Area Separation Wall Assemblies

Applicable Standards and References

ASTM C 588 Standard Specification for Gypsum Base for Veneer Plasters
ASTM C 645 Standard Specification for Nonstructural Steel Framing Members
ASTM C 840 Standard Specification for Application and Finishing of Gypsum Board
ASTM C 1396 Standard Specification for Gypsum Board
ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Materials
Gypsum Association GA-216 Application and Finishing of Gypsum Panel Products
Gypsum Association GA-290 Gypsum Board Area Separation Walls
Gypsum Association GA-600 Fire Resistance Design Manual
ICC ES, Inc. Legacy Report 90-26.01 H-Stud Fire Wall/Party Wall
UL Design No. U347

Recommendations

Installation of Phillips H-Stud and U-Track components for Area Separation Wall Assemblies shall be consistent with methods and provisions described under above certifications; by test reports or fire-rated assemblies, by code evaluation reports and as indicated below. The recommendations below are referenced from National Gypsum's Construction Guide and include Gold Bond gypsum board brand names. All listed gypsum board products may be used with Phillips H-Stud components; please reference Gypsum Association GA-600 Fire Resistance Design Manual for approved assemblies and board manufacturers.

Gypsum board panels should be handled with care to prevent fracturing or deformation of edges.

Order H-Studs and 1" Fire-Shield Shaftliner according to the following outline:
- Basement wall section – length equal to distance from foundation floor to approximately 3" above floor line of first floor.
- Intermediate floors – length equal to distance between floor lines.
- Topmost floor – length to extend to top of parapet wall or to roof intersection, depending on detail.

General Installation:

- Phillips H-Studs are secured at the foundation floor by the flanges of Phillips U-Track. Phillips U-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. Phillips U-Track is also used at the roof line or at the parapet and at wall ends.
- Phillips H-Studs are separated from the flanking wood stud walls by a 1" air space or covered with one layer of 1/2" regular gypsum wallboard. As an alternate, 1/2" Fire-Shield G Gypsum Wallboard panels can be fastened to Phillips H-Studs and joints covered with tape and joint compound to provide a finished wall. As another alternative, when a 1" air space cannot be maintained between the wood framing and Phillips H-Studs, Phillips H-Studs and Phillips U-Tracks are covered by screw-attached, 6" wide battens fabricated from 1/2" Fire-Shield G Gypsum Wallboard. Mineral wool or glass fiber can be installed in the wood stud cavity to provide higher STC ratings.
- At intermediate floors and at roof intersection, the steel framing members are attached on each side to adjacent structure framing with Phillips ASW Clips (breakaway, heat-softenable aluminum ASW clips). Phillips ASW Clips are attached to the wood framing at each vertical steel framing stud/wood framing intersection using one 3/8" Type S pan head screw into the steel and one 8d nail or 1-1/4" Type W drywall screw into the wood framing.
- The recommended location of Phillips ASW Clips is on the lower side of the structural wood framing. In that location, Phillips ASW Clips provide the greatest assurance that the H-Stud Area Separation Wall will remain in place and structurally sound should one of the adjacent structures fail.

Basement Wall Installation:

- Beginning at foundation floor, attach Phillips 2" U-Track to concrete with power-driven fasteners spaced 24" o.c. If required, apply acoustical sealant along edges of track at floor line.
- Install Phillips U-Track on foundation walls where H-Stud Area Separation Wall intersects, if applicable. Fasten with power-driven fasteners 24" o.c. Caulk edges as with floor track.
- At intersection of foundation or exterior wall and H-Stud Area Separation Wall, begin erecting by inserting first layer of 1" Shaftliner into floor and wall track. Insert second layer back-to-back with first, and seat into floor and wall track.

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Shaftliner and studs may be set into position from the basement floor or fed down through the space provided in the wood framing from the floor above.

- Making sure that both pieces of Shaftliner are seated all the way into the floor and wall tracks and that their edges are flush, insert Phillips H-Stud into the floor track and engage the H-Stud legs over the long edges of the Shaftliner panels. Seat Phillips H-Stud fully so the panel edges contact the stud web.
- Continue in this manner, erecting two thicknesses of Shaftliner, and installing the legs of the H-Stud over the Shaftliner edges until the wall is completed. Again, make sure all studs and panels are tightly pushed together. Screw studs to floor track with pan head 3/8" Type S screws.
- If the H-Stud Area Separation Wall terminates at a foundation wall, the last two Shaftliner panels will have to be inserted from the floor above. Panels are pushed down into the channel formed by the previous H-Stud's legs and the legs of the wall track.
- If the H-Stud Area Separation Wall terminates at or past a framed wall, insert the last panels conventionally and cap the end of the H-Stud Area Separation Wall with Phillips 2" U-Track. Screw flanges of floor track to flanges of termination track.
- The top edge of the erected wall is then capped off by placing 2" U-Track over studs and panels. Screw the track to each Phillips H-Stud with 3/8" Type S pan head screws. Locate track splices at a stud so both track ends can be screw-attached to the stud.
- Attach studs to adjacent wood framing with Phillips ASW Clips. Secure Phillips ASW Clips to the studs with one 3/8" Type S pan head screw through the short leg of the clip. Secure the clip to wood framing with one 8d nail or 1-1/4" Type W screw through the long leg of the clip. Clips are attached to wood framing at each vertical steel-horizontal wood framing intersection. The ASW clips may be attached directly to the steel studs or through the wallboard batten face into the studs.
- When a 1" air space cannot be maintained between the H-Studs and the wood framing, gypsum board batten strips are installed centered over Phillips H-Studs and Phillips U-Track on both sides of the wall. Battens are 6" and 3" wide, cut from sheets of 1/2" Fire-Shield G gypsum board. 3" battens are installed over Phillips U-Track at foundation and roof. 6" battens are screw-attached to Phillips H-Studs with 1" Type S screws spaced 12" o.c. screwed into alternate legs of H-Stud.

Installation at Intermediate Floors and at Roof:

- Attach Phillips 2" U-Track to the already installed capping track of the lower floor's wall. This back-to-back track installation allows the H-Stud Area Separation Wall to be erected one floor at a time. Secure the two tracks together with two 3/8" Type S pan head screws 24" o.c. Stagger back-to-back track joints a minimum of 12".
- Erect Shaftliner and Phillips H-Studs in the same manner as for the basement wall, except that starting and ending procedures vary depending on the exterior wall intersection detail.
- At roof intersection, the walls are capped off with Phillips U-Track. Track is fastened to each stud with 3/8" Type S pan head screws. Phillips H-Studs are fastened to wood framing with Phillips ASW Clips. The specific framing procedure varies according to roof junction details as illustrated in drawings.
- Moisture-Resistant (MR) Gypsum Board or gypsum sheathing should be used on the faces of stud framing of H-Stud Area Separation Walls which project beyond roof or side walls.
- Fire blocking must be provided to completely fill the wall cavity at the intermediate floor construction. Mineral wool or gypsum board filler may be used.

Interior Facings:

- 2" H-Stud Area Separation Wall can be finished in a variety of ways depending on wall installation. For load-bearing applications, wood stud walls meeting required codes must be erected flanking the H-Stud Area Separation Wall. Stud walls are then finished in whatever method is specified.
- For nonload-bearing applications, finished wall may be of any type meeting local codes including exposed Shaftliner and battens, if needed, where appearance is not critical.

Basement Wall Section:

- Length equal to distance from foundation floor to approximately 3" above floor line of first floor.

Intermediate Floors:

- Length equal to distance between floor lines.

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Topmost Floor:

- Length to extend to top of parapet wall or to roof intersection, depending on detail.

FIRE RESISTANCE RATINGS
(Test Method ASTM E 119)
Table referenced from the National Gypsum Construction Guide

Construction	Endurance	Reference	Approx. Weight	Thickness
2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Stud 24" (610 mm) o.c. Phillips H-Studs and Phillips U-Track covered by 1/2" (12.7 mm) Fire-Shield G Gypsum 6" (152 mm) wide strips.	2 hrs.	ICC-ES, Inc. Legacy Report 90-26.01 WHI 694-0200.6	9.4 psf	3"
2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Stud 24" (610 mm) o.c. One nominal 2 x 4 wood stud wall, one side. 1" (25.4 mm) air space between Shaftliner and wood studs. Wood studs 16" (406 mm) o.c. faced with one layer 1/2" (12.7 mm) regular gypsum wallboard.	2 hrs.	ICC-ES, Inc. Legacy Report 90-26.01 WHI 651-0508 *U347	12.0 psf	7"
2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Stud 24" (610 mm) o.c. One nominal 2 x 4 wood stud wall, each side. 1" (25.4 mm) air space between Shaftliner and wood studs. Wood studs 16" (406 mm) o.c. faced with one layer 1/2" (12.7 mm) regular gypsum wallboard.	2 hrs.	ICC-ES, Inc. Legacy Report 90-26.01 WHI 651-0508 *U347	16.0 psf	12"

*UL Design U347 requires a minimum 3/4" air space

SOUND CONTROL
Table referenced from the National Gypsum Construction Guide

Construction	Reference	STC
A: 2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Studs. Phillips H-Studs and U-Track covered by 1/2" (12.7 mm) Fire-Shield G 6" (152 mm) wide batten strips.	NGC 2827	35
B: 2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Studs with one flanking 2 x 4 wood stud wall. 1" (25.4 mm) air space between walls, with 1/2" (12.7 mm) regular gypsum wallboard screw attached to wood studs.	NGC 2826	50
C: Same as B with stud cavities insulated with 3-1/2" (88.9 mm) glass fiber or mineral wool.	NGC 2825	55
D: 2 layers of 1" (25.4 mm) Fire-Shield Shaftliner inserted in 2" (50.8 mm) Phillips H-Studs with 2 x 4 wood stud walls flanking both sides. 1" (25.4 mm) air space between walls, with 1/2" (12.7 mm) regular gypsum wallboard screw attached to wood studs. Stud cavities uninsulated.	NGC 2823	50
E: Same as D with one stud wall insulated with 3-1/2" (88.9 mm) glass fiber or mineral wool. One stud wall uninsulated.	NGC 2824	55
F: Same as D with both stud cavities insulated with 3-1/2" (88.9 mm) glass fiber or mineral wool.	NGC 2820	57
For additional sound control see GA-600 for assemblies utilizing resilient sound channels (Phillips RC-1 or RC-2)		

See GA-600 for additional Fire Resistance and Sound Control information

Limitations

- Non-load bearing
- This assembly should not be used where exposure to constant dampness or conditions under which free water can be formed
- Gypsum board products and insulation in the H-Stud Area Separation Wall must be protected from wetting and therefore shall not be installed until building is closed in
- H-Stud Area Separation Wall may be built up to a maximum of 66' high

H-Stud Area Separation Wall Assemblies

Made in the U.S.A.

Phillips is proud that their drywall finishing accessories, including Phillips H-Stud Area Separation Wall Assemblies, are made in the United States of America.