Horizontal Shaftwall Duct and Ceiling Assemblies

DESCRIPTION

I-Stud Cavity Shaftwall Systems can be erected horizontally and used as economical fire resistive assemblies for corridor ceilings, stair soffits, and protection for mechanical ducts.

The I-Stud Cavity Shaftwall System for Horizontal Duct Protection consists of I-Studs 24" o.c. with 1" Fire-Shield Shaftliner panels inserted in the stud tabs, and three layers of 1/2" Fire-Shield C Gypsum Wallboard attached to the stud flanges opposite the Shaftliner panels. This System provides fire protection for mechanical ducts and has been tested from both sides.

Two layers of 1/2" Fire-Shield C Gypsum Wallboard attached to the stud flanges opposite the Shaftliner provide 2-hour fire protection when used as a corridor ceiling or stair soffit.*

Similarly, single layer 5/8" Fire-Shield or Fire-Shield C Gypsum Wallboard attached to the stud flanges opposite the Shaftliner panels provide 1-hour fire protection when used as a corridor ceiling or stair soffit.*

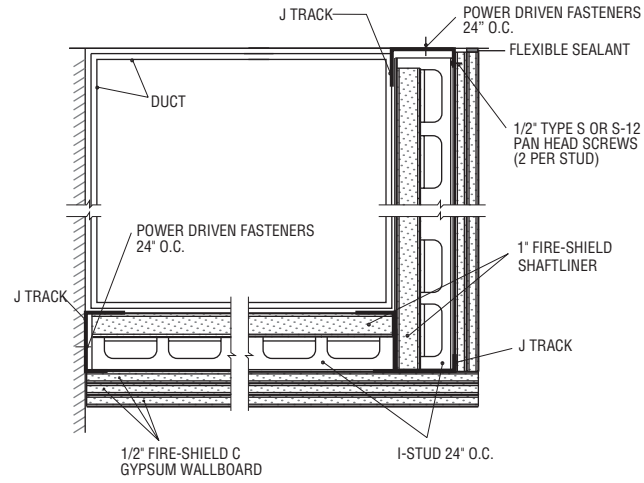
LIMITATIONS

I-Stud Cavity Shaftwall Systems erected horizontally for corridor ceilings or stair soffits are designed to carry their own deadweight only, and should not be used where there is access to an attic or loft above, or any probability of storage.

In addition, the 2-hour horizontal duct protection system is not designed to carry live loads or the weight of the mechanical ducting it is protecting.

Maximum allowable horizontal spans of each system are shown in the table below.

DETAILS



TWO HOUR HORIZONTAL DUCT PROTECTION
WHI 694-0300.1
09260GG
Scale: 2" = 1'-0"

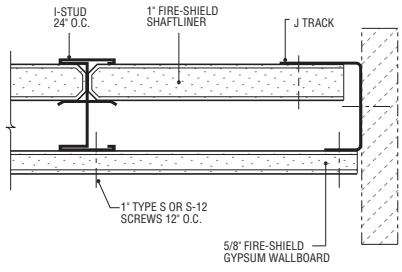
TECHNICAL DATA

MAXIMUM HORIZONTAL SPANS FOR I-STUD ASSEMBLIES

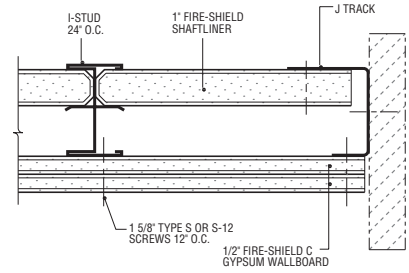
Stud Size in. (mm)	Minimum Steel Thickness in. (mm)	Corridor Ceilings And Stair Soffits: 1-Hour Fire Resistive Rating	Corridor Ceilings And Stair Soffits: 2-Hour Fire Resistive Rating	Horizontal Membrane And Duct Protection: 2-Hour Fire Resistive Rating
2 1/2" (63.5 mm)	0.020 (.508)	7'-8" (2337 mm)	7'-8" (2337 mm)	7'-2" (2184 mm)
2 1/2" (63.5 mm)	0.0329 (.836)	8'-8" (2642 mm)	9'-4" (2845 mm)	8'-8" (2642 mm)
4" (102 mm)	0.020 (.508)	10'-3" (3124 mm)	10'-9" (3277 mm)	10'-0" (3048 mm)
4" (102 mm)	0.0329 (.836)	11'- 9" (3581 mm)	12'-1" (3683 mm)	11'-3" (3429 mm)
6" (152 mm)	0.0329 (.836)	14'- 10" (4521 mm)	14'-10" (4521 mm)	13'-10" (4216 mm)

Note: Spans based on L/240 deflection and twice the dead load weight, and 24" o.c. stud spacing.

DETAILS



ONE HOUR HORIZONTAL SHAFTWALL-
CORRIDOR CEILING AND STAIR SOFFIT*
09260II
Scale: 3" = 1'-0"



TWO HOUR
CORRIDOR CEILING AND STAIR SOFFIT*
09260HH
Scale: 3" = 1'-0"

*See ICBO Evaluation Services, Inc. Evaluation Report No. 3579 for allowable values and/or conditions of use concerning material presented in this document. It's subject to re-examinations, revisions, and possible cancellations.

SPECIFICATIONS

SECTION 09 21 16.23

SHAFTWALL SYSTEMS

THE FOLLOWING PARAGRAPHS ARE FOR INSERTION INTO SECTIONS OF GENERIC SPECIFICATIONS OR GENERIC/PROPRIETARY SPECIFICATIONS COVERING SHAFTWALL PRODUCTS. THE NATIONAL GYPSUM COMPANY PRODUCT NAME FOLLOWS THE GENERIC DESCRIPTION IN PARENTHESES.

PART 1 GENERAL

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. C 36, Specification for Gypsum Wallboard.
   2. C 442, Specification for Gypsum Backing Board, Gypsum Coreboard, and Gypsum Shaftliner Board.
   3. C 588, Specification for Gypsum Base for Veneer Plaster.
   4. C 630, Specification for Water-Resistant Gypsum Backing Board.
   5. C 840, Specification for Application and Finishing of Gypsum Board.
   6. C 1396, Specification for Gypsum Board.

PART 2 PRODUCTS

2.02 MATERIALS

A. Gypsum Board:
   1. Fire-Resistant Gypsum Shaftliner Board: A gypsum core shaftwall panel with additives to enhance fire resistance of the core and surfaced with water repellent paper on front, back, and long edges and complying with ASTM C 442/C 1396, Type X (Gold Bond BRAND Fire-Shield Shaftliner).
      a. Thickness: 1"
      b. Width: 2'
      c. Length: 7' through 14'
      d. Edges: Beveled
   2. Fire-Resistant Mold-Resistant Gypsum Shaftliner Board: A gypsum core shaftwall board with additives to enhance fire resistance of the core and surfaced with a moisture/mold/mildew resistant paper on front, back, and long edges; and complying with ASTM C442/C1396, Type X (Gold Bond BRAND Fire-Shield Shaftliner XP).
      a. Thickness: 1"
      b. Width: 2'
      c. Length: 7' through 14'
      d. Edges: Beveled
      e. Mold and Mildew Resistance: Panel score of 10, when tested in accordance with ASTM D 3273
   3. Fire-Resistant Gypsum Board: A gypsum core wall panel with additives to enhance fire resistance of the core and surface with paper on front, back, and long edges and complying with ASTM C 36/C 1396, Type X.
      a. Thickness: 1/2" (Gold Bond BRAND Fire-Shield C Wallboard), 5/8" (Gold Bond BRAND Fire-Shield Wallboard), or 5/8" (Gold Bond BRAND Fire-Shield C Wallboard).
      b. Width: 4'
      c. Length: 6' through 16'
         (1/2" Fire-Shield C Wallboard,
         5/8" Fire-Shield Wallboard)
         Length: 8' through 14'
         (5/8" Fire-Shield C Wallboard)
      d. Edges: Square, Tapered, or Beveled Taper (Sta-Smooth edge)
   4. Fire-Resistant Mold-Resistant Gypsum Board: A gypsum core wall panel with additives to enhance fire resistance and the water resistance of the core; surfaced with a moisture/mold/mildew resistant paper on front, back and long edges and complying with ASTM C 630/C 1396, type X.
      a. Thickness: 1/2" (Gold Bond BRAND XP Fire-Shield C Wallboard) 5/8" (Gold Bond BRAND XP Fire-Shield Wallboard.
      b. Width: 4'
      c. Length: 8', 10' or 12'
      d. Edges: Square or Tapered
      e. Mold and Mildew Resistance: Panel score of 10, when tested in accordance with ASTM D 3273
   5. Fire-Resistant Water-Resistant Gypsum Backing Board: A gypsum core wall panel with additives to enhance the fire resistance and water resistance of the core; surfaced with water repellent paper on front, back, and long edges; and complying with ASTM C 630/ C 1396; Type X.
      a. Thickness: 1/2" (Gold Bond BRAND Fire-Shield C MR Board); 5/8" (Gold Bond BRAND Fire-Shield MR Board).
      b. Width: 4'
      c. Length: 6' through 16'
      d. Edges: Tapered
   6. Fire-Resistant Plaster Base: A gypsum core panel with additives to enhance the fire resistance of the core and surfaced with absorptive paper on front, back, and long edges and complying with ASTM C 588/C 1396; Type X.
      a. Thickness: 1/2" (Kal-Kore BRAND Fire-Shield C Plaster Base); 5/8" (Kal-Kore BRAND Fire-Shield Plaster Base).
      b. Width: 4'
      c. Length: 8' and 12'
      d. Edges: Tapered

B. Joint Treatment
   1. Tape: 2 1/16" wide paper reinforcing tape (ProForm BRAND Joint Tape).
   2. Compound: Drying type pre-mixed compound (ProForm BRAND Multi-Use Joint Compound, ProForm BRAND All-Purpose Joint Compound, regular grade and machine grade, ProForm BRAND Lite Joint Compound, ProForm BRAND Ultra Joint Compound, and ProForm BRAND XP Joint Compound).
   3. Compound: Drying type job mixed vinyl base compound (ProForm BRAND Triple-T Compound).
   4. Compound: Drying type topping compound, pre-mixed (ProForm BRAND Topping Joint Compound, ProForm BRAND Ultra Joint Compound).
   5. Compound: Setting type job mixed chemical-hardening compound (ProForm BRAND Sta-Smooth Joint Compound, ProForm BRAND Sta-Smooth Lite Joint Compound).

PART 3 EXECUTION

3.01 INSTALLATION

A. Install studs, tracks, shaftliner, wallboard, accessories, and finish wallboard joints in accordance with the following ASTM Standards and manufacturer's recommendations:
   1. ASTM Standards:
   a. Metal Framing: C 754
   b. Joint Treatment: C 840.
   2. Manufacturer's Recommendations: National Gypsum Company *"Gypsum Construction Guide."*