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 Board 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 Board 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 Board 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.

### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Stud Size</th>
<th>Minimum Steel Thickness</th>
<th>Corridor Ceilings And Stair Soffits</th>
<th>Horizontal Membrane And Duct Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>in. (mm)</td>
<td>in. (mm)</td>
<td>1-Hour Fire Resistive Rating</td>
<td>2-Hour Fire Resistive Rating</td>
</tr>
<tr>
<td>2 1/2” (63.5 mm)</td>
<td>0.020 (.508)</td>
<td>7’-8” (2337 mm)</td>
<td>7’-8” (2337 mm)</td>
</tr>
<tr>
<td>2 1/2” (63.5 mm)</td>
<td>0.032 (8.36)</td>
<td>8’-8” (2642 mm)</td>
<td>9’-4” (2845 mm)</td>
</tr>
<tr>
<td>4” (102 mm)</td>
<td>0.020 (.508)</td>
<td>10’-3” (3277 mm)</td>
<td>10’-9” (3277 mm)</td>
</tr>
<tr>
<td>4” (102 mm)</td>
<td>0.032 (8.36)</td>
<td>11’-9” (3581 mm)</td>
<td>12’-1” (3683 mm)</td>
</tr>
<tr>
<td>6” (152 mm)</td>
<td>0.032 (8.36)</td>
<td>14’-10” (4521 mm)</td>
<td>13’-10” (4216 mm)</td>
</tr>
</tbody>
</table>

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

*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.
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 840, Specification for Application and Finishing of
      Gypsum Board.
   2. 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 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 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 1396, Type X.
      a. Thickness: 1/2" (Gold Bond BRAND Fire-Shield C
         Gypsum Board), 5/8" (Gold Bond BRAND Fire-Shield
         Gypsum Board).
      b. Width: 4'
      c. Length: 6', 8', 10' or 12'
      d. Edges: Square, Tapered
      e. Mold and Mildew Resistance: Panel score of 10,
         when tested in accordance with ASTM D 3273
   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 1396, type X.
      a. Thickness: 1/2" (Gold Bond BRAND XP Fire-Shield C
         Gypsum Board) 5/8" (Gold Bond BRAND XP Fire-Shield
         Gypsum Board).
      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 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 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, gypsum board, accessories,
   and finish gypsum board 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."