

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada Design Criteria and Allowable Variances

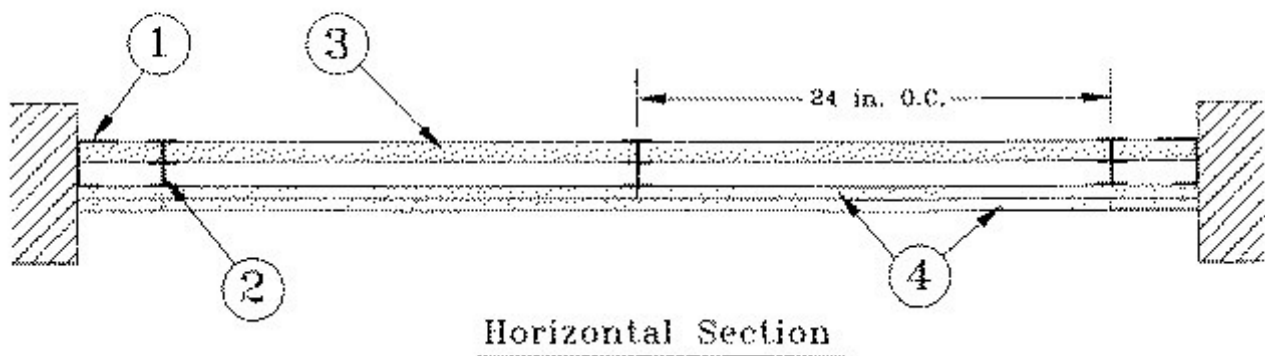
Design No. U417

August 18, 2023

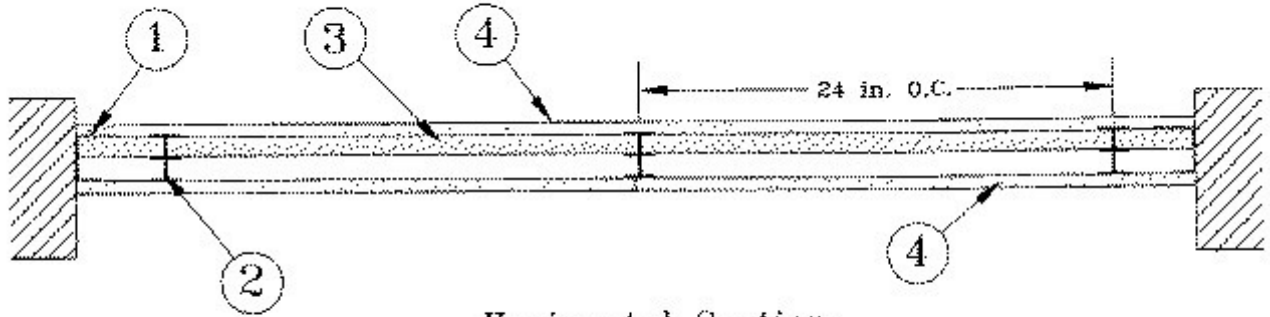
**Nonbearing Wall Ratings — 1, 2 or 3 Hr**

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

**System A - 2 Hr.**

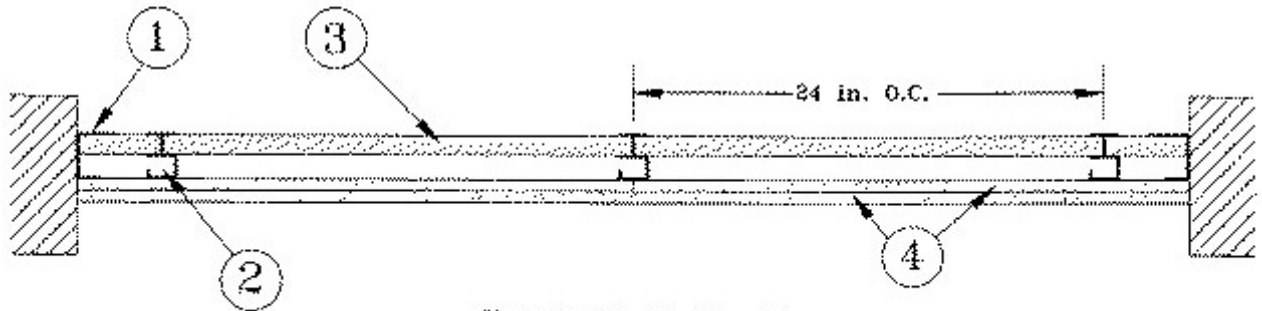


System B - 2 Hr.



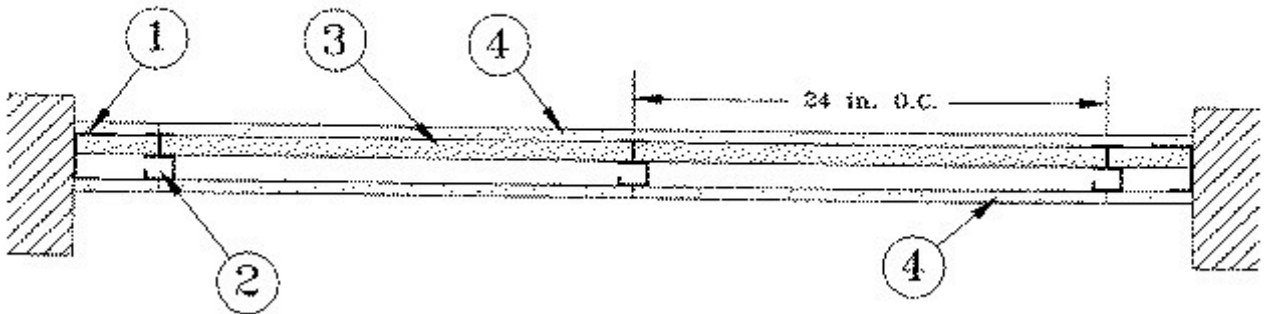
Horizontal Section

System C - 2 Hr.



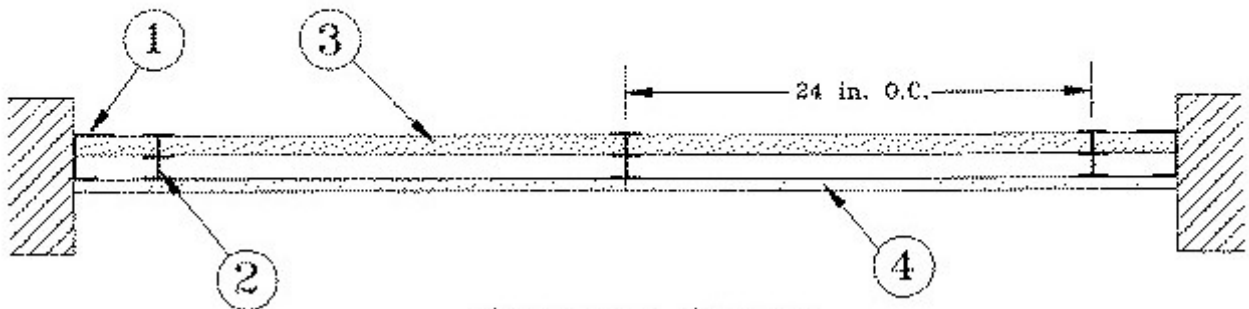
Horizontal Section

System D - 2 Hr.



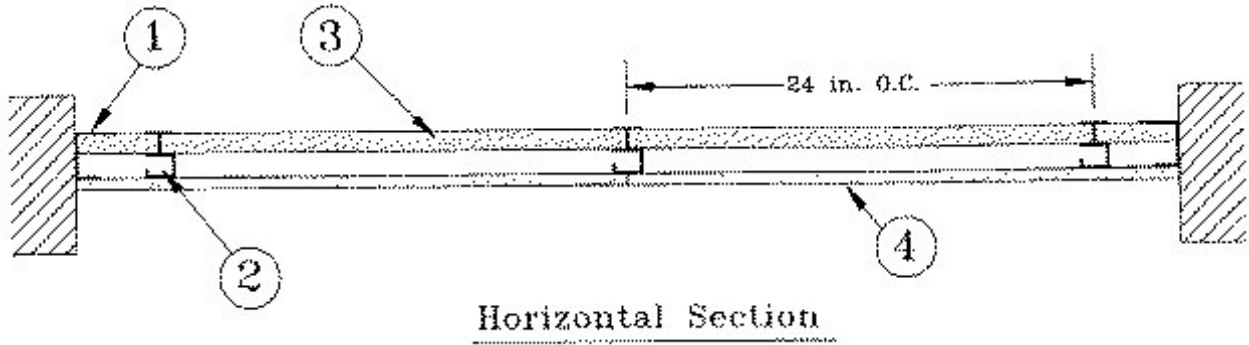
Horizontal Section

System E - 1 Hr.

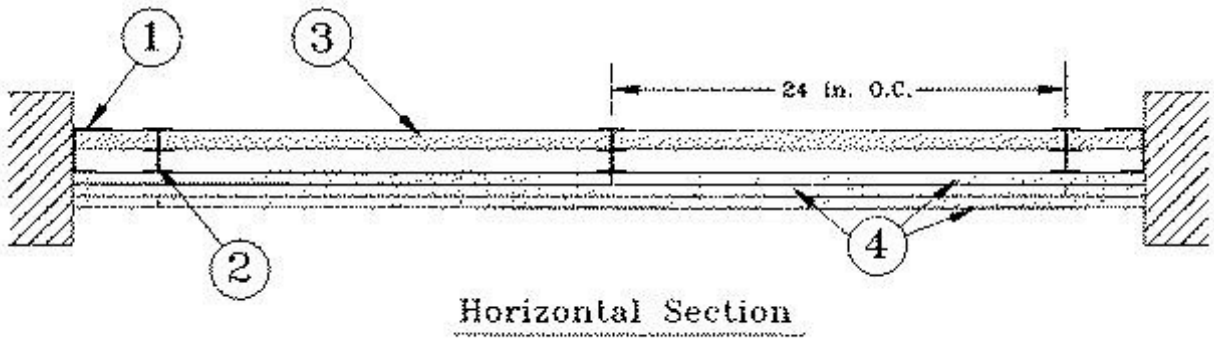


Horizontal Section

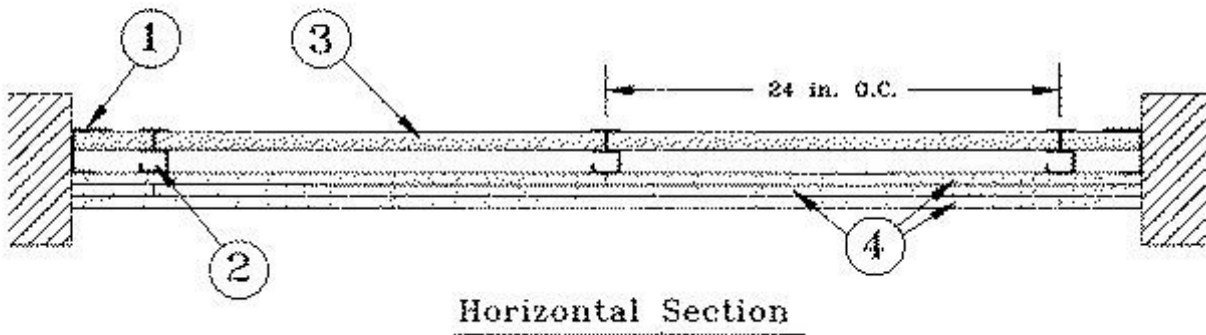
System F - 1 Hr.



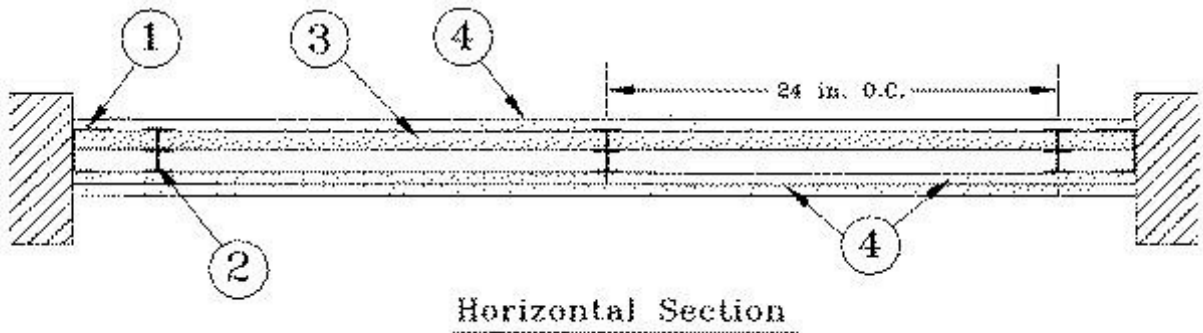
System G - 3 Hr.



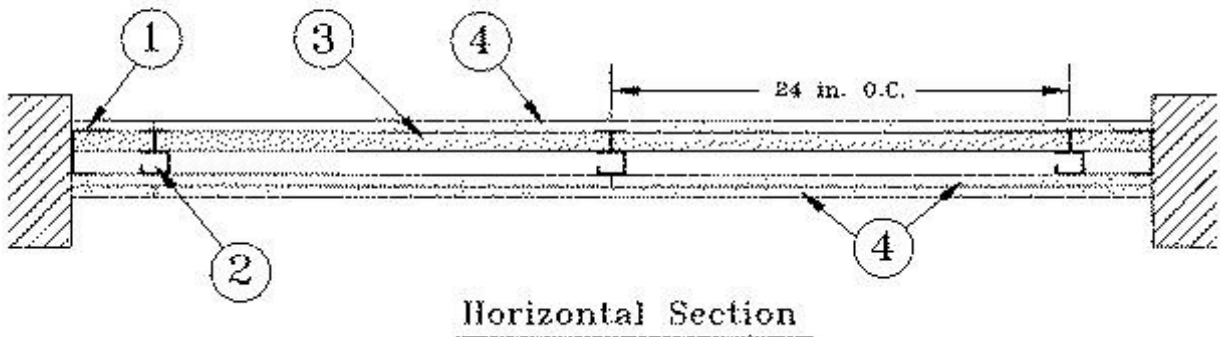
System H - 3 Hr.



## System I - 3 Hr.



## System J - 3 Hr.



1. **Floor, Side and Ceiling Runners** — "J" -shaped runner, min 2-1/2 in. deep, with unequal legs of 1-1/8 in. and 2-1/8 in., fabricated from min 25 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.

For use with **Type LWTX in Systems A-D** - "J" -shaped runner, min 4 in. deep, with unequal legs of nominal 1 in. and 2-1/4 in., fabricated from min 25 MSG galv steel. Runners positioned with short leg toward finished side of wall. Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.

### 2. **Steel Studs** —

#### **Systems A, B, E, G and I**

"I" -shaped studs fabricated from min 25 MSG galv steel, min 2-1/2 in. deep, 1-1/2 in. wide. Studs contain 3/4 in. wide by 2-1/4 in. high holding tabs spaced 2-3/4 in. OC. Cut to lengths 5/8 in. less than floor-to-ceiling height and spaced 24 in.

#### **Systems C, D, F, H and J**

"C-T" -shaped studs, min 2-1/2 in. deep, 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 5/8 in. less than floor-to-ceiling height and spaced 24 in. or

"C-H" - shaped studs, min 2-1/2 in. deep, fabricated from min 25 MSG galv steel. Cut to lengths 5/8 in. less than floor-to-ceiling height and spaced 24 in. OC.

For use with **Type LWTX in System A-D**, "C-T" or "C-H" shaped studs, min 4 in. deep, nominal 1-1/2 in. wide, fabricated from min 25 MSG galv steel. Cut to lengths 5/8 in. less than floor to ceiling height and spaced 24 in. OC.

2A. **Steel Studs** — (Not Shown) — Alternate to Item 2, "E" - shaped studs installed back to back in place of "C-H" - shaped studs (Item 2) "E" - shaped studs secured together with steel screws spaced a maximum 12 in. OC. Fabricated from min 25 MSG (min 20 MSG when Item 5A is used) galv steel, min 2-1/2 in. deep, with one leg 1 in. long and two legs 3/4 in. long. Shorter legs 1 in. apart to engage gypsum liner panels. Cut to lengths 3/8 to 1/2 in. less than floor to ceiling heights.

3. **Gypsum Board\*** — Gypsum liner panels, nom 1 in. thick, 24 in. wide. Panels cut max 1 in. less in length than floor to ceiling height. Vertical edges inserted in "T" -shaped section of "C-T" studs, the "H"-shaped section of "C-H" studs or tabs holding tabs of "I" studs. Free edge of end panels attached to long leg of "J" -runners with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced not greater than 12 in. OC. When wall height exceeds liner panel length, liner panel may be butted to extend to the full height of the wall. Horizontal joints need not be staggered or backed by steel framing.

**CERTAINTED GYPSUM INC** — Types Shaftliner, EGRG Shaftliner, GlasRoc Shaftliner, LGFCSL.

**THAI GYPSUM PRODUCTS PCL** — Type Shaftliner, M2Tech Shaftliner Type X

#### 4. **Gypsum Board\*** —

##### **Systems A and C**

For use with **Type Shaftliner** liner panels - Gypsum panels, nom 1/2 or 5/8 in. thick, 48 in. wide, applied in one of the following methods. Method 1 — Base layer installed horizontally to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. Face layer installed vertically to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC, staggered 12 in. from base layer screws. Method 2 — Base layer installed vertically to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. Face layer installed horizontally to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC, staggered 12 in. from base layer screws. Additionally, Type G screws to be installed at the center of each stud cavity, 1-1/2 in. from both sides of the horizontal joint. For the 1/2 in. thick and 5/8 in. thick boards, the Type G screw length shall be 1-1/4 in. and 1-1/2 in. long, respectively. Method 3 — Base layer installed vertically to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. Face layer installed vertically to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC, staggered 12 in. from base layer screws. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

For use with **Type EGRG, GlasRoc Shaftliner, or LGFCSL** liner panels - Gypsum panels, nom 1/2 or 5/8 in. thick, 48 in. wide, applied in one of the following methods. Method 1 — Base layer installed horizontally to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. with the 1st screws installed 12 in. from the board edge. Face layer installed vertically to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC. with the 1st and 2nd screws spaced 3/4 in. and 6-3/4 in. from the board edge, staggered 12 in. from base layer screws. Method 2 — Base layer installed vertically to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC. with the 1st screws installed 12 in. from the board edge. Face layer installed horizontally to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC., with the 1<sup>st</sup> and 2<sup>nd</sup> screws installed 3/4 in. and 6-3/4 in. from the board edge, staggered 12 in. from base layer screws. Additionally, Type G screws to be installed at the center of each stud cavity, spaced 12 in. OC., 1-1/2 in. from both sides of the horizontal joint. For the 1/2 in. thick and 5/8 in. thick boards, the Type G screw length shall be 1-1/4 in. and 1-1/2 in. long, respectively. Method 3 — Base layer installed vertically to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC with the 1st screws installed 12 in. from the board edge. Face layer installed vertically to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 24 in. OC, with the 1st and 2nd screws spaced 3/4 in. and 6-3/4 in. from the board edge, staggered 12 in. from base layer screws. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

For use with **Type LWTX** - Base layer installed horizontally to 4 in. steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC. Face layer installed horizontally to steel studs with 1-5/8 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC. Face layer joints staggered 24 in. OC from base layer.

**CERTAINTED GYPSUM INC** — 1/2 in. thick Type C, 5/8 in. thick Type C or 5/8 in. thick Type X-1, SilentFX, EGRG, GlasRoc, GlasRoc-2, LWTX.

**THAI GYPSUM PRODUCTS PCL** — Type C, M2Tech Type C and Type X

##### **Systems B and D**

Gypsum panels, nom 1/2 or 5/8 in. thick, 48 in. wide, applied vertically to steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC. Vertical joints on opposite sides of wall staggered a min of 24 in.

For use with **Type LWTX** - Installed horizontally to both sides of 4 in. steel studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC. Horizontal Joints on opposite sides of wall staggered 24 in.

**CERTAINTED GYPSUM INC** — 1/2 in. thick Type C, 5/8 in. thick Type C or 5/8 in. thick Type X-1, SilentFX, EGRG, GlasRoc, GlasRoc-2, LWTX.

**THAI GYPSUM PRODUCTS PCL** — Type C, M2Tech Type C and Type X

##### **Systems E and F**

A. Gypsum panels, nom 5/8 in. thick, 48 in. wide, applied vertically with edges centered over studs, with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC.

**CERTAINTED GYPSUM INC** — Type X-1, Easi-Lite Type X-2, SilentFX, EGRG, GlasRoc, GlasRoc-2, or Type C

**THAI GYPSUM PRODUCTS PCL** — Type X and Type C, M2Tech Type C

B. As an alternate to Item A - Gypsum panels, nom 5/8 in. thick, 48 in. wide, applied horizontally only to min. 2-1/2 in. studs with 1 in. long Type S or S-12 self-drilling, self-tapping bugle head steel screws spaced 12 in. OC.

**CERTAINTED GYPSUM INC** — Type LWTX

### **Systems G and H**

Gypsum panels, nom 5/8 in. thick, 48 in. wide applied in three layers to one side of the assembly. Base layer applied vertically, remaining layers applied vertically or horizontally. Base layer attached to studs with 1 in. long Type S or S-12 steel screws spaced 24 in. OC. Middle layer attached to studs with 1-5/8 in. long Type S or S-12 steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Face layer attached to studs with 2-1/4 in. long Type S or S-12 steel screws spaced 16 in. OC when installed vertically or 12 in. OC when installed horizontally. Screws offset 6 in. from layer below. Horizontal joints on adjacent layers staggered a min of 12 in. When applied horizontally, 1-1/2 in. long Type G screws to be installed at the center of each stud cavity, 1-1/2 in. from both sides of the horizontal joint. Vertical joints centered over studs and staggered 24 in. on adjacent layers.

**CERTAINTED GYPSUM INC** — Type C

**THAI GYPSUM PRODUCTS PCL** — Type C, M2Tech Type C

### **Systems I and J**

Gypsum panels, nom 5/8 in. thick, 48 in. wide applied in two layers to one side of the assembly and one layer to the other side. On the two layer side, base layer applied vertically, face layer applied vertically or horizontally. Base layer attached to studs with 1 in. long Type S or S-12 steel screws spaced 24 in. OC. Face layer attached to studs with 1-5/8 in. long Type S or S-12 steel screws spaced 24 in. OC when installed vertically or 16 in. OC when installed horizontally. Screws offset 6 in. from layer below. When applied horizontally, 1-1/2 in. long Type G screws to be installed at the center of each stud cavity, 1-1/2 in. from both sides of the horizontal joint. Vertical joints centered over studs and staggered 24 in. on adjacent layers. On the one layer side, panels applied vertically and attached to studs with 1 in. long Type S or S-12 steel screws spaced 12 in. OC. Vertical joints on opposite sides of wall staggered min 24 in. OC.

**CERTAINTED GYPSUM INC** — Type C

**THAI GYPSUM PRODUCTS PCL** — Type C, M2Tech Type C

5. **Furring Channels** — (Optional, Not Shown) — For use with single or double layer systems. Resilient furring channels fabricated from min 25MSG corrosion protected steel, installed horizontally, and spaced vertically a max 24 in. OC. Flange portion of channel attached to each intersecting "I", "C-T", "C-H" or "E" stud on side of stud opposite the 1 in. liner panels with 1/2 in. long Type S or S-12 pan-head steel screws. When furring channels are used, wallboard to be installed vertically only.

5A. **Steel Framing Members\*** — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board installed vertically only.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 5Aa) to studs (Item 2 or 2A). Clips spaced max. 24 in. OC., and secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

**PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (2.75).

5B. **Steel Framing Members\*** — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs (Item 2 or 2A) as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG

galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members\*** — Used to attach furring channels (Item a) to studs. Clips spaced 24 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

**STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips — Type A237R

5C. **Steel Framing Members\*** — (Optional, Not Shown) — For use with single or double layer systems. Furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs (Item 2 or 2A) as described in Item 5Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 4.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 5Ca) to studs. Clips spaced 24 in. OC, and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**REGUPOL AMERICA** — Type SonusClip

5D. **Steel Framing Members\*** — (Optional, Not Shown) — For use with single or double layer systems. Resilient channels and Steel Framing Members as described below:

a. **Resilient Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Phillips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 4.

b. **Steel Framing Members\*** — Used to attach resilient channels (Item 5Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

**KEENE BUILDING PRODUCTS CO INC** — Type RC+ Assurance Clip

6. **Joint Tape and Compound** — (Not shown) — Joints covered with joint compound and paper or mesh tape. Screw heads covered with joint compound.

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2023-08-18

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