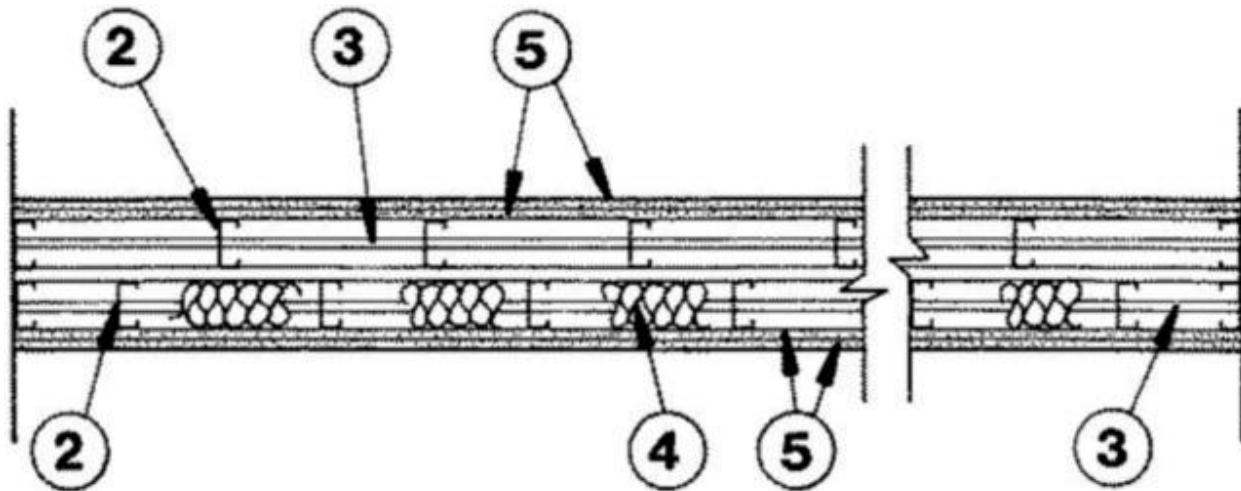


## Design No. V490

September 27, 2018

*Nonbearing Wall Rating — 1 or 2 Hr. (See Item 5)*

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



### HORIZONTAL SECTION

1. **Floor and Ceiling Runners** — (For use with Item 5) — Channel shaped, attached to floor and ceiling in two rows, a min 1 in. apart, with steel fasteners spaced 24 in. OC. Runners fabricated from min No. 25 MSG galv steel, 1-1/4 in. deep and 2-1/2 in. wide.

1A. **Floor and Ceiling Runners** — (As an alternate to Item 1, For use with Items 5A, 5B, and 5C) — Channel shaped, attached to floor and ceiling in two rows, a min 1 in. apart. Runners fabricated from min No. 20 MSG galv steel, 1-3/16 in. deep and 2-9/16 in. wide.

2. **Steel Studs** — (For use with Item 5) — Channel shaped, supplied with cutouts, friction - fitted into floor and ceiling runners and spaced a max 24 in. OC. Studs cut 1/2 in. less than assembly height and evenly staggered between the two rows of floor and ceiling runners. Studs fabricated from min No. 25 MSG galv steel, min 2-1/2 in. wide by 1-5/8 in. deep with 3/8 in. folded back return flange legs.

2A. **Steel Studs** — (As an alternate to Item 2, For use with Items 5A, 5B, and 5C) — Channel shaped, supplied with cutouts, friction - fitted into floor and ceiling runners and spaced a max 16 in. OC. Studs cut 1/2 in. less than assembly height and staggered flush against the floor

runners. Studs fabricated from min No. 20 MSG galv steel, min 2-1/2 in. wide by 1-3/16 in. deep with 1/4 in. folded back return flange legs.

3. **Lateral Bracing** — The bracing shall be in accordance with the SSMA Technical Note Dated March 2000 Referencing Unsheathed Flange Bracing.

3A. **Lateral Bracing** — (Not Shown) — Right angle- shaped, supplied with notches spaced 12, 16, or 24 in. OC., friction-fitted to the cutouts in steel studs, supplied in 7/8 in. by 7/8 in. by 50 in. lengths. Lateral bracing bars fabricated from min. 20 MSG galvanized steel. The bracing shall be located a maximum of 5 ft on center in accordance with the manufacturers published literature.

**CLARKDIETRICH BUILDING SYSTEMS** — TradeReady Spazzer 9200 bar

4. **Batts and Blankets** — Optional — Glass fiber batts may be friction-fitted to completely fill the stud cavities on one or both rows of studs.

See **Batts and Blankets** Category (BZJZ) for names of manufacturers.

5. **Gypsum Board\*** — Nom 5/8 in. thick, 4 ft. wide, gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Single layer installed on each side of the steel studs for the 1-hr system, two layers installed on each side of the studs for the 2-hr system. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (2-hr system) staggered one stud cavity. Horizontal edge joints and horizontal butt joints need not be backed by framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (2-hr system) staggered a minimum of 6 in. For the single layer system: panels attached to steel studs and floor runner with 1 in. long Type S steel screws spaced 8 in. OC when applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when applied vertically. For the double layer system: base layer panels attached to steel studs and floor runner with 1 in. long Type S steel screws spaced 16 in., face layer panels attached to steel studs and floor runner with 1-5/8 in. long Type S steel screws spaced 12 in. When used in widths other than 48 in., gypsum panels to be installed horizontally.

**GEORGIA-PACIFIC GYPSUM L L C** — Types 5, C, DA, DAP, DAPC, DD, DGG, DS, TG-C

5A. **Gypsum Board\*** — (As an alternate to Item 5, may be used as the base layer on one or both sides of wall, for direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs

with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.

**RAY-BAR ENGINEERING CORP** — Type RB-LBG

5B. **Gypsum Board\*** — (As an alternate to Item 5, may be used as the base layer on one or both sides of wall, for direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

**RADIATION PROTECTION PRODUCTS INC** — Type RPP - Lead Lined Drywall

5C. **Gypsum Board\*** — (As an alternate to Item 5 when used as the base layer on one or both sides of wall, For direct attachment only) — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B, C or D". Fasteners for face layer gypsum panels (Items 5) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws.

**MAYCO INDUSTRIES INC** — "X-Ray Shielded Gypsum"

6. **Joint Tape and Compound** — (Not Shown) — Outer layer joints covered with joint compound and paper or mesh tape. Screw heads covered with joint compound. Paper tape and joint compound may be omitted when gypsum boards are supplied with square edges.

7. **Steel Framing Members\*** — (Not Shown) — (Optional on one or both sides, not shown, for 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 attached to furring channels as described in Item 5.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7a) to studs (Item 2). Clips spaced max. 48 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).

7A. **Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for 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 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 5.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Aa) to studs. Clips spaced 48 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

7B. **Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for 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, 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 a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 5.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 7Ba) 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. Furring channels are friction fitted into clips.

**REGUPOL AMERICA** — Type SonusClip

7C. **Steel Framing Members\*** — (Optional, Not Shown) (Optional on one or both sides, not shown, for 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. Philips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 5.

b. **Steel Framing Members\*** — Used to attach resilient channels (Item 7Ca) 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

8. **Lead Batten Strips** — (Not Shown, For Use With Item 5A) — Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5A) and optional at remaining stud locations. Required behind vertical joints.

9. **Lead Discs or Tabs** — (Not Shown, For Use With Item 5A) — Used in lieu of or in addition to the lead batten strips (Item 8) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5A) underneath

screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

10. **Lead Batten Strips** — (Not Shown, For Use With Item 5B) — Lead batten strips, min 2 in. wide, max 8 ft. long with a max thickness of 0.14 in. Strips placed on the exterior face of studs and attached with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5) and optional at remaining stud locations.

11. **Lead Discs or Tabs** — (Not Shown, For Use With Item 5B) — Used in lieu of or in addition to the lead batten strips (Item 3) or optional at other locations - Nom. 3/8 in. diam by max 0.085 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

12. **Lead Batten Strips** — (Not Shown, For Use With Item 5C) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grades "A, B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 6) and optional at remaining stud locations.

13. **Lead Discs** — (Not Shown, For Use With Item 5C) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.9% meeting the Federal Specification QQ-L-201f, Grades "A, B, C or D".

14. **Wall and Partition Facings and Accessories\*** — (Optional, Not Shown) — For use with Item 5 — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-510 panel is installed between the steel framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

**SERIOUS ENERGY INC** — Type QuietRock QR-510

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

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