

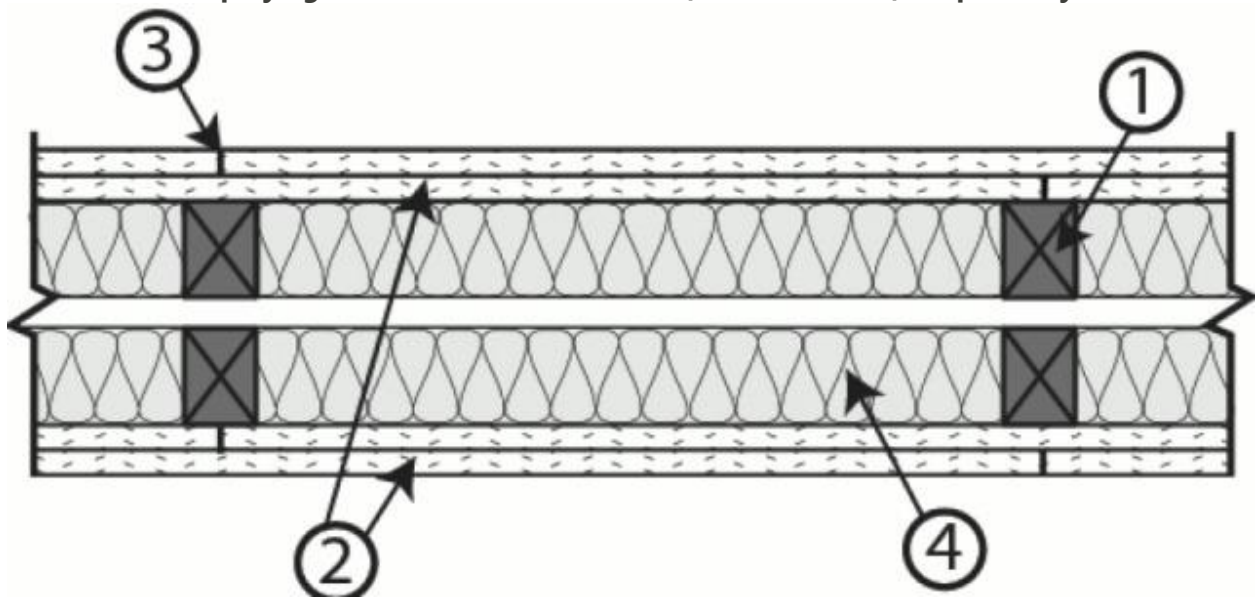
# Design No. V324

June 6, 2022

**Bearing Wall Rating - 1 (Not Shown) or 2 Hr. (See Item 2 and 2A)  
Finish Rating - Undetermined**

**This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide [BXUV](#) or [BXUV7](#)**

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



1. **Wood Studs** — Nom 2 by 4 in., spaced 24 in. OC max. Cross braced at mid-height and effectively firestopped at top and bottom of wall. No min. air space between stud rows except to accommodate attachment of sheathing, where required. See Items 4 and 5.

2. **Gypsum Board\*** — (For the 2 hr. Rating) - 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Outer layers fastened to framing with 1-7/8 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. As an alternate, inner layer attached to studs with the 1-7/8 in. nails spaced 6 in. OC. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8 in. OC. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.

When **Steel Framing Members\*** (Items 6-6E) are used. Base layer gypsum panels fastened to framing with 1 in. long Type S steel screws spaced a max 16 in. OC, with last screw 1 in. from edge of board. Face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max 8 in. OC.

When used in widths other than 48 in., gypsum board to be installed horizontally.

**AMERICAN GYPSUM CO** — Types AGX-1, M-Glass, AG-C, LightRoc

**CERTAINTEED GYPSUM INC** — Type X-1, GlasRoc, or C

2A. **Gypsum Board\*** — (For the 1 hr. Rating) - 5/8 in. thick, one layer applied either horizontally or vertically. Fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. As an option, attached to studs with the 1-7/8 in. nails spaced 6 in. OC. Vertical joints located over studs and staggered min one stud cavity. When used in widths other than 48 in., gypsum board to be installed horizontally.

**CERTAINTEED GYPSUM INC** — Type X-1, GlasRoc, or C

2B. **Gypsum Board\*** — (For use with Items 4D and 5) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 2 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1 in. long Type W steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-5/8 in. long steel screws spaced 8 in. OC.

3. **Joints and Fastener Heads** — Outer layer gypsum board joints covered with tape and joint compound. Fastener heads covered with joint compound. Joint tape and joint compound may be omitted when square edge panels are used.

4. **Batts and Blankets\*** — 3-1/2 in. max thickness glass or mineral fiber batt insulation. **Optional** when sheathing (Item 5) is used on both halves of wall. See **Batts and Blankets** (BZJZ) category for list of Classified companies.

4A. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft<sup>3</sup>. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft<sup>3</sup>, in accordance with the application instructions supplied with the product.

**U S GREENFIBER L L C** — INS735, INS745 and INS750LD for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only

4B. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 4) and Item 4A when Sheathing (Item 5) is used on both halves of wall — Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

**NU-WOOL CO INC** — Cellulose Insulation

4C. **Fiber, Sprayed\*** — As an alternate to Batts and Blankets (Item 5) when Sheathing (Item 5) is used on both halves of wall — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft<sup>3</sup>.

**INTERNATIONAL CELLULOSE CORP** — Celbar-RL

4D. **Foamed Plastic\*** — (For use with Item 2B and 5) — Not Shown — As an alternate to Item 4. Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

**CARLISLE SPRAY FOAM INSULATION** — Types SealTite Pro Closed Cell (CC), SealTite Pro Open Cell (OC), SealTite Pro OCX, SealTite Pro No Trim 21, SealTite Pro One Zero, Foamsulate Closed Cell, Foamsulate OCX, Foamsulate 70, and Foamsulate HFO.

5. **Sheathing** — (Optional, except where specified) — Installed on interior sides of wood studs. Septum may be sheathed with min 7/16 in. thick wood structural panels min grade "C-D" or "Sheathing" or min 1/2 in. thick **Mineral and Fiber Boards\***.

See **Mineral and Fiber Boards** (CERZ) category for names of Classified companies.

6. **Furring Channel** — Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws.

6A. **Steel Framing Members\*** — (Optional, Not Shown) — 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 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 2.

B. **Steel Framing Members\*** — Used to attach furring channels (Item A) to studs (Item 1). Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall 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-V, RSIC-1 (2.75), RSIC-V (2.75)

6B. **Steel Framing Members\*** — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

A. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.

**B. Steel Framing Members\*** — Used to attach furring channels (Item A) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

**PLITEQ INC** — Type Genie Clip

**6C. Steel Framing Members\*** — (Optional, Not Shown) — 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 2.

**B. Steel Framing Members\*** — Used to attach furring channels (Item 6CA) 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

**6D. Steel Framing Members\*** — (Optional, Not Shown) — 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 2.

**b. Steel Framing Members\*** — Used to attach furring channels (Item 6Da) 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

**6E. Steel Framing Members\*** — (Optional, Not Shown) — 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 2.

**b. Steel Framing Members\*** — Used to attach resilient channels (Item 6Ea) 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

**6F. Steel Framing Members\*** — (Optional, Not Shown) — Used as an alternate method to attach resilient channels to wall studs. A resilient sound isolation accessory shall be used at each attachment point of the resilient channels and spaced max 24 in. O.C. Channel ends butted and centered under the structural members and attached with one accessory at each end. Additional accessories used to hold resilient channels that support the gypsum board end joints. The accessory envelops the mounting edge of the resilient channel. The accessory and resilient channel are fastened to the structural members with the screws supplied with the accessory and per the accessory manufacturer's installation instructions.

**PAC INTERNATIONAL L L C** — Type RC-1 Boost

7. **Non-Bearing Wall Partition Intersection** — (Optional — Not Shown) — Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

**\* 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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