

# Design No. U342

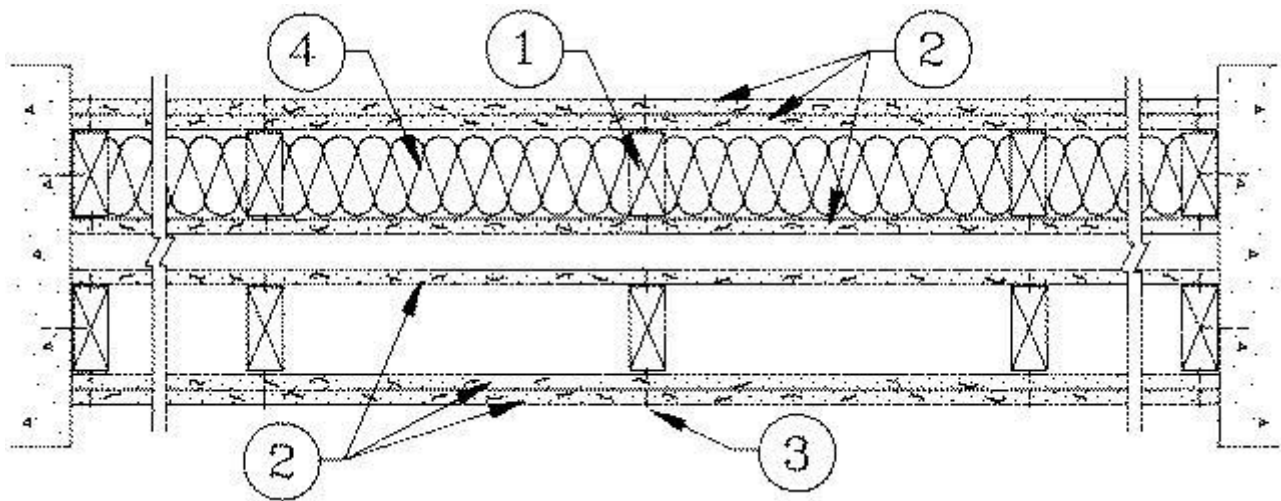
October 07, 2020

Bearing Wall Rating — 2 Hr.

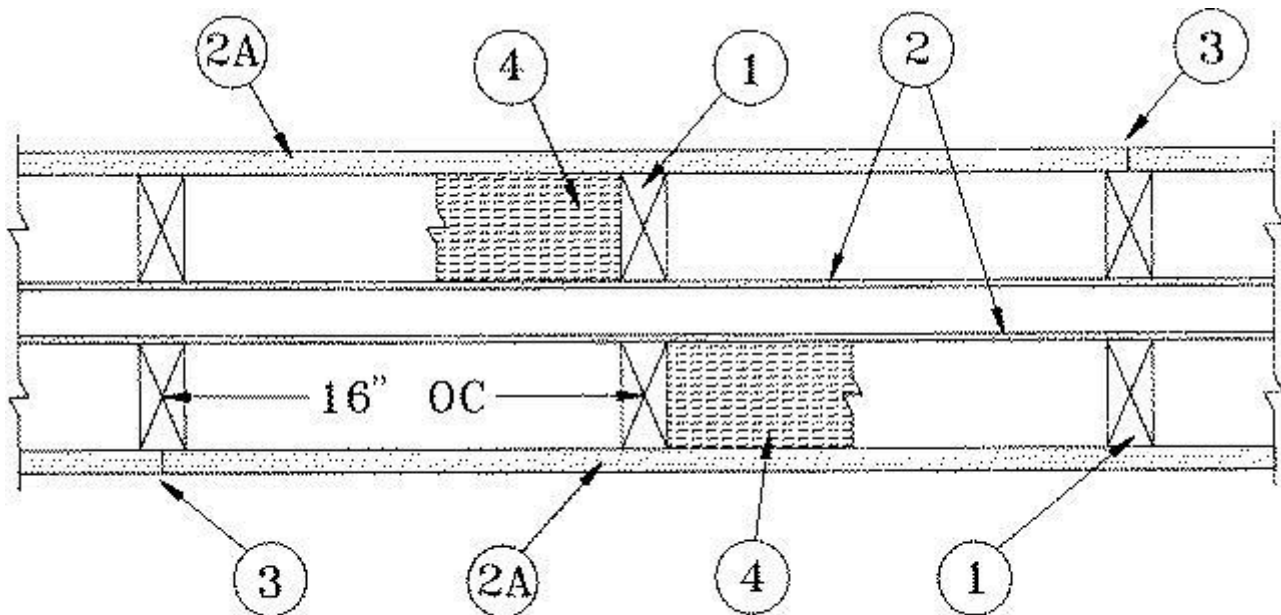
Finish Rating — Min 59 min.

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.



HORIZONTAL SECTION



ALTERNATE CONSTRUCTION  
HORIZONTAL SECTION

1. **Wood Studs** — Nom 2 by 4 in. Cross braced at mid-height and effectively firestopped at top and bottom of wall. Spaced a max of 16 or 24 in. OC depending on type of wallboard. See Item 2 below.

2. **Gypsum Board\*** — 5/8 in. thick, 4 ft wide. Applied either horizontally or vertically. Inner layers nailed to studs and bearing plates 6 in. O.C. with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. Outer layer of double layered side nailed to studs and bearing plates 8 in. O.C. with 8d cement coated nails, 2-3/8 in. long, 0.113 in. shank diam and 9/32 in. diam head. Vertical joints located over studs. As an alternate, No. 6 bugle-head drywall screws, 1-7/8 or 2-3/8 in. long for the inner and outer layers, respectively, may be substituted for the cement coated nails. All joints in outer layer of double layer sides staggered with joints in inner layer.

When **Steel Framing Members\*** (Item 5-5D) are used, base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced max 24 in. OC; face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max 12 in. OC.

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

NOTE: Only board types marked with + may be used in assemblies with 24 in. OC spacing of studs.

**AMERICAN GYPSUM CO** — Types AGX-1, M-Glass, AG-C+, AGX-11, LightRoc

**BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO** — Type DBX-1

**CABOT MANUFACTURING ULC** — Type X, 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

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

**CGC INC** — Type C+, IP-X1, IP-X2+, IPC-AR+, SCX, ULIX, SHX, ULX, WRC+, WRX

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Types LGFC2A, LGFC6A, LGFC-C/A+, LGFC-WD, LGLLX, CLLX

**GEORGIA-PACIFIC GYPSUM L L C** — Types 5+, 6, 9, DAP, DD, DA, DAPC+, DGG, DS, C, GPFS6. LS, TG-C+, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X+, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W

**NATIONAL GYPSUM CO** — Type eXP-C, FSK, FSK-1, FSK-C+, FSMR-C, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSW-C+, FSL or FSW-G, RSX.

**NATIONAL GYPSUM CO** — Riyadh, Saudi Arabia — Type FR, or WR.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type C+, PG-2, PG-3, PG-3W, PG-3WS, PG-4, PG-5W, PG-5WS, PG-6, PG-9, PG-11, PG-C, PGS-WRS, PGI

**PANEL REY S A** — Types GREX, GRIX, PRX, PRC2, RHX, MDX, ETX or PRC+

**SIAM GYPSUM INDUSTRY (SARABURI) CO LTD** — Type EX-1

**THAI GYPSUM PRODUCTS PCL** — Type X or Type C

**UNITED STATES GYPSUM CO** — Type C+, FRX-G, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULIX, ULX, WRC+ or WRX

**USG BORAL DRYWALL SFZ LLC** — Types C, SCX

**USG MEXICO S A DE C V** — Types C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX

2A. **Gypsum Board\*** — 3/4 in. thick, 4 ft wide. Applied vertically to studs (spaced max 16 in. OC) and bearing plates 6 in. OC with 8d cement coated nails, 2-3/8 in. long, 0.113 in. shank diam and 9/32 in. diam heads or 2-3/8 in. long No. 6 bugle head drywall screws. When this single layer system is used Finished Rating is reduced to 26 min.

**CGC INC** — Type ULTRACODE

**UNITED STATES GYPSUM CO** — Type ULTRACODE

**USG BORAL DRYWALL SFZ LLC** — Type ULTRACODE

**USG MEXICO S A DE C V** — Type ULTRACODE

**2B. Gypsum Board\*** — As an Alternate to Item 2 — 5/8 in. thick applied either horizontally or vertically. Inner layers 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. When used in widths other than 48 in., gypsum board to be installed horizontally. All joints in outer layer of double layer sides staggered with joints in inner layer.

NOTE: Only board types marked with + may be used in assemblies with 24 in. OC spacing of studs.

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

**CABOT MANUFACTURING ULC** — Type X, 5/8 Type X

**CERTAINTED GYPSUM INC** — Type C, Type X, Type X-1, Easi-Lite Type X-2

**CGC INC** — Type C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULIX, ULX, WRC+, WRX.

**NATIONAL GYPSUM CO** — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

**THAI GYPSUM PRODUCTS PCL** — Type C or Type X

**UNITED STATES GYPSUM CO** — Type C+, FRX-G, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULIX, ULX, WRC+ or WRX

**USG BORAL DRYWALL SFZ LLC** — Type SCX

**USG MEXICO S A DE C V** — Types C+, IP-X1, IP-X2+, IPC-AR+, SCX, SHX, ULX, WRC+, WRX

2C. **Gypsum Board\*** — (As an alternate to Items 2 through 2B) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically and secured as described in Item 2.

**GEORGIA-PACIFIC GYPSUM L L C** — Type X ComfortGuard Sound Deadening Gypsum Board

2D. **Gypsum Board\*** — (As an alternate to Items 2 through 2C) — Not to be used with Item 5. Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only.

**NATIONAL GYPSUM CO** — Type SBWB

2E. **Gypsum Board\*** — (As an alternate to Items 2 through 2D) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock ES

2F. **Gypsum Board\*** — (As an alternate to Items 2 through 2E) — Not to be used with item 5. Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only.

**CERTAINTED GYPSUM INC** — Type SilentFX

2G. **Gypsum Board\*** — (As an alternate to Item 2) — 5/8 in. thick, 4 ft. wide, applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 2.

**CERTAINTED GYPSUM INC** — 5/8" Easi-Lite Type X

2H. **Gypsum Board\*** — (As an alternate to 5/8 in. Type FSW in Item 2) — Nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Two layers of 5/16 in. for every single layer of 5/8 in. gypsum board described in Item 2. Horizontal joints on the same side need not be staggered. Inner layer of each double 5/16 in. layer attached with fasteners, as described in item 2, spaced 24 in. OC. Outer layer of each double 5/16 in. layer attached per Item 2.

**NATIONAL GYPSUM CO** — Type FSW

2I. **Wall and Partition Facings and Accessories\*** — (As an alternate to Item 2) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock 527

2J. **Gypsum Board\*** — (As an alternate to Item 2) — 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with 1-1/4 in. long Type W steel screws spaced 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. Outer layer attached to studs over inner layer with 1-7/8 in. long Type W steel screws spaced 10 in. OC offset 5 in. from base layer with the last two screws 4 and 1 in. from the edges of the board. Vertical joints located over studs. Vertical and horizontal joints between inner and outer layers staggered. Outer layer joints covered with joint tape and compound, screwheads covered with joint compound. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC6A, Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3. **Joints and Nailheads** — Gypsum board joints of outer layer covered with paper tape and joint compound. Nail heads of outer layer covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

4. **Batts and Blankets\*** — (Optional) — 3-1/2 in. max thickness glass or mineral fiber batt insulation.

See **Batts and Blankets** (BZJZ) category of 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, 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) — 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 4) — 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. **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. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft<sup>3</sup>.

**APPLEGATE HOLDINGS L L C** — Applegate Advanced Stabilized Cellulose Insulation

5. **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-1 (2.75).

5A. **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

5B. **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 5Ba) 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

5C. **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 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 2.

b. **Steel Framing Members\*** — Used to attach furring channels (Item 5Ca) 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

5D. **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 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

5E. **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 16 or 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

6. **Wall and Partition Facings and Accessories\*** — (Optional, Not Shown) — 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-500 or QR-510 panel is installed between the wood 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.

**PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM** — Type QuietRock QR-500 and 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.**

[Last Updated](#) on 2020-10-07