

# Design No. G510

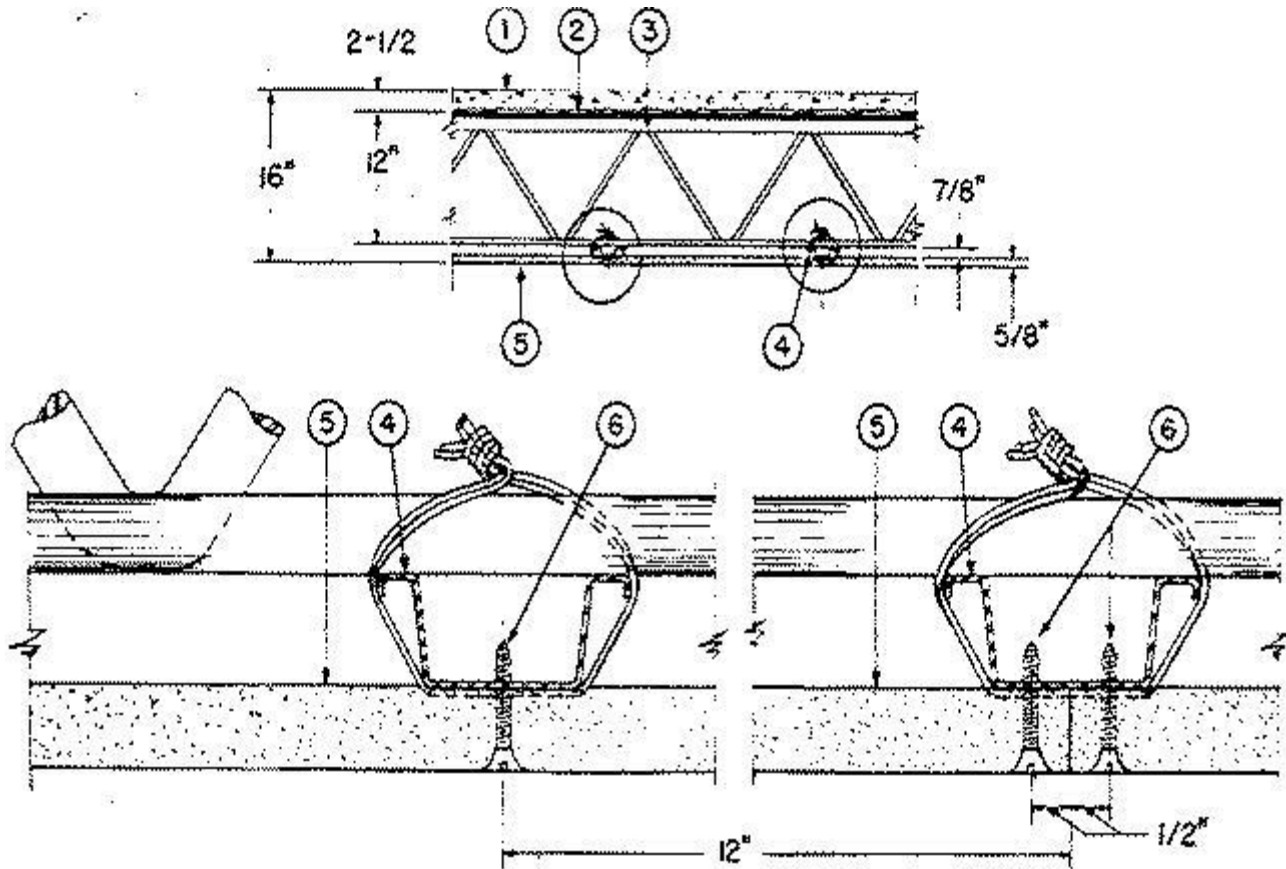
March 10, 2020

Restrained Assembly Rating — 2 Hr.

Unrestrained Assembly Rating — 2 Hr.

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. **Normal-Weight Concrete** — Siliceous or carbonate aggregate, 150 + or - 3 pcf unit weight, 4000 psi compressive strength.

2. **Metal Lath** — 3/8 in. rib, 3.4 lb/sq yd expanded steel; tied to each joist at every other rib, and midway between joists at side lap with 18 SWG galv steel wire.

As an alternate, the form material for the concrete may be corrugated steel deck 9/16 in. deep of 28 MSG (min) galv steel welded to supports 15 in. OC with washers. The concrete thickness shall be measured to the top plane of the steel deck.

3. **Steel Joists** — Type 12J4 min size; spaced 24 in. OC and welded to end supports. Bridging provided by 1/2 in. diam steel bars welded to top and bottom chords of each joist.

4. **Furring Channel** — No. 25 MSG galv steel, 2-3/8 in. or 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC, except at end joints noted below, secured to each joist with a double strand of 18 SWG galv wire. Adjoining lengths of channels lapped 12 in. and tied together with two double strand wire ties, one at each end of overlap.

As an alternate, furring channels may be secured to 1-1/2 in. cold-rolled channels at every intersection with double strand of 18 SWG galv wire. Cold-rolled channels spaced 24 in. OC and suspended perpendicular from lower chords of joists with 8 SWG galv wire spaced 48 in. OC along channels.

**4A. Steel Framing Members\*** — (optional, not shown) — alternate method to attach furring channels (Item 4) to joists (Item 3). Clips spaced 48 in. OC., and secured to alternating joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert. Clip attached to the bottom chord with a 1/4 in. dia. zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. 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. 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 No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the wallboard butt joints, as described in Item 5.  
**PAC INTERNATIONAL L L C** — Types RSIC-1, RSIC-1 (2.75).

**4B. Steel Framing Members\*** — (Optional, Not Shown) - Used as an alternate method to attach furring channels (item 4) to joists (item 3). Clips spaced at 48" OC and secured to the bottom of the joists with cup washer installation kit provided by manufacturer. On underside of bottom chord, 1-1/2 in. dia x 3/8 in. deep No. 16 galv steel cup washer is placed to surround the rubber insert of clip. Clip attached to the bottom chord with a 1/4 in. dia zinc plated bolt inserted through the center grommet and between the chord members; depth of bolt determined as 1-1/2 in. plus the depth of the bottom chord of the joist. Fastened on the top side of the bottom chord with a second cup washer placed open side up, and a 1/4 in. zinc plated "Nyloc" nut. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 5.  
**STUDCO BUILDING SYSTEMS** — RESILMOUNT Sound Isolation Clips - Type A237R

**5. Gypsum Board\*** — 5/8 in. thick, attached with the long dimension at right angles to furring channels. Wallboard at end joints secured to an additional furring channel wire-tied to the joists and placed over the joint and extending a minimum of 4 in. beyond the joint at either end and wire-tied to the bar joint not more than 16 in. from either end. Side joints of wallboards to occur midway between joists. Paper tape and cement joint treatment not required for rating.

When **Steel Framing Members** (Item 4A) are used, wallboard butt joints shall be staggered min. 2 ft. within the assembly, and occur between the main furring channels. Edge joints may occur beneath the joists. At the wallboard butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the joist with one RSIC-1 clip at each end of the channel. Gypsum board attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Wallboard joints covered with fiber tape and joint compound.

When **Steel Framing Members** (Item 4B) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two supporting furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along both additional furring channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of

the extra butt joint channels as well as into the main channel that runs between. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

**AMERICAN GYPSUM CO** — Type AGX-1, LightRoc

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

**CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C** — Type LGFC-C/A.

**GEORGIA-PACIFIC GYPSUM L L C** — Type 5, C, DAPC, TG-C.

**THAI GYPSUM PRODUCTS PCL** — Type C, Type X.

6. **Wallboard, Screw** — No. 6 Phillips flathead, self-tapping, sheet-metal type screw, 1 in. long, spaced 1/2 in. from edges and 12 in. OC. Screws shall be driven no farther than flush with the exposed surface of the wallboard. Wallboard on each side of end joint attached to the 4 in. overlap of furring channel with one additional screw.

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[Last Updated](#) on 2020-03-10