

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](#)

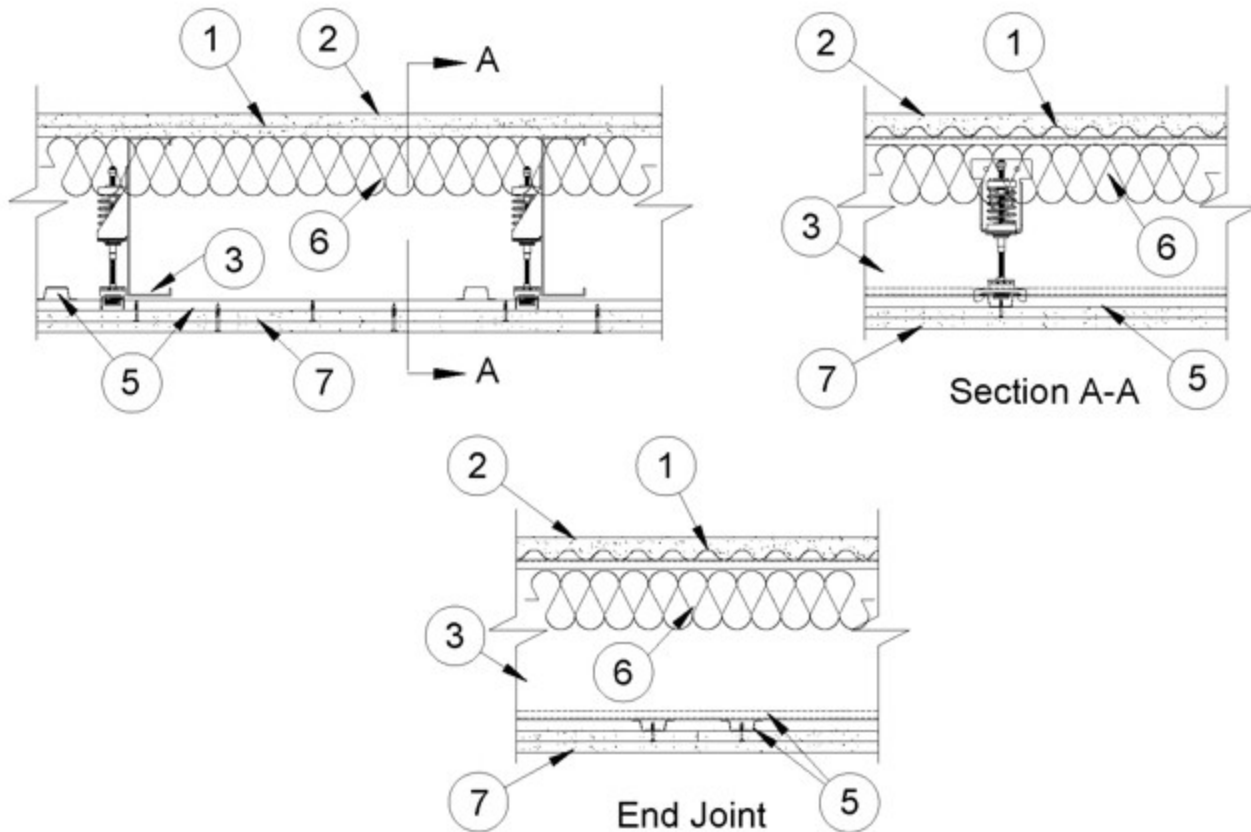
Design No. **H516**

March 3rd, 2025

Unrestrained Assembly Rating - 1-1/2 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. **Steel Deck** — Min 9/16 in. deep, 22 MSG galv corrugated fluted steel deck. Overlapped one corrugation at each side and attached to each joist with 5/8 in. long No. 10-16 TEK screws at each side joint and no more than 12 in. OC between sides.

2. **Floor Topping Mixture*** — Compressive strength to be 3500 psi min. Minimum thickness to be 1 in. as measured from the top plane of the steel deck or the Floor Mat Material*. Refer to manufacturer's instructions accompanying the material for specific mix

design. An ethylene vinyl acetate adhesive may be applied to the steel deck prior to the installation of the floor topping mixture at a maximum application rate of 0.025 lbs./ft².

HACKER INDUSTRIES INC — Firm-Fill CMD

Floor Mat Materials* — (Optional) - Floor mat material nom 5/64 in. (2 mm) thick adhered to steel deck with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of floor-topping mixture. Floor topping thickness a min 1 in. (25 mm) over the floor mat.

HACKER INDUSTRIES INC — Hacker Sound-Mat.

3. Structural Steel Members* — The proprietary joists are channel-shaped, 9-1/4 in. min depth. Joists are fabricated from min No. 16 MSG galv steel. Joists spaced max 24 in. OC. Joists attached to joist rim with three min 3/4 in. long self-drilling No. 10-16 TEK screws through tab to the outside of the web. At joist rim splices bearing on supports, joists rims are connected using an overlapping section of a 12 in. long splice plate (a joist piece) or TradeReady splice plate, with four min 3/4 in. long self-drilling No. 10-16 TEK screws to each rim piece.

CLARKDIETRICH BUILDING SYSTEMS — Types TDJ24, TDW24, TDJ48, TDW48 Floor Joists, TD Rim Joist

4. Joist Bridging — Not shown — For use with Item 3- Installed immediately after joists are erected and before construction loads are applied. The bridging, 21/2TDSB18, consisting of No. 18 MSG galv steel, 2-1/2 in. wide by 21-3/4 in. long structural bridging staggered between the steel joists attached to the bottom joist flange with one min 3/4 in. long self-drilling No. 10-16 TEK screw at each end tab of bridging. Solid bridging consisting of cut to length joist sections placed between outer joists and at center joist with 8 ft OC max spacing. Solid blocking is screw-attached at joist web using a No. 16 MSG, min 50 ksi steel support clip (EasyClip S-Series) with three min 3/4 in. long No. 10 x 16 self-drilling steel TEK screws per leg on the outside of the joist web, and with a No. 16 MSG, min 50 ksi steel support clip (EasyClip E-Series) with three min 3/4 in. long No. 10 x 16 self-drilling steel TEK screws per leg on the inside of the joist web. Alternatively, blocking may consist of min 925JB24 prefabricated joist blocking attached with two No. 10-16 TEK screws at each connection angle.

5. Furring Channels — Formed of No. 25 MSG galv steel, nominal 2-1/2 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to joists and friction fit into Steel Framing Members (Item 6). Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap or with two TEK screws along each leg of the 6 in. overlap. Additional channels, spaced back to back, nominally 6 in. apart, required at gypsum board (Item 7) butt joints. Butt joint channels held in place by strong back channels placed upside down, on top of, and running perpendicular to primary furring channels, extending 6 in. longer than length of gypsum side joint. Strong back channels spaced maximum 48 in. OC. Strong back channels secured to every intersection of primary furring channels with four 7/16 in. pan head screws, two along each of the legs at intersections. Butt joint channels run perpendicular to strong back channels and shall be minimum 6 in. longer than length of joint, secured to strong back channels with 7/16 in. pan head screws, two along each of the legs at intersection with strong back channels.

6. Steel Framing Members* — Used to attach furring channels (Item 5) to joists (Item 3). Clips spaced 48 in. OC and secured along joist webs at each furring channel intersection with min. 3/4 in. long self-drilling No. 10-16 TEK screws through each of the provided hole locations. Furring channels are friction fitted into clips.

PAC INTERNATIONAL L L C — Type RSIC-S1-1 Ultra

6A. Steel Framing Members* — (Optional, Not Shown) — As an alternate to Item 6.

a. Furring channels — Formed of No. 25 MSG galv steel. 2-9/16 in. wide by 7/8 in. deep, spaced 12 in. OC, perpendicular to joist. Channels secured to joist as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.

b. Steel Framing Members* — Used to attach furring channels (Item a) to the steel trusses (Item 3). Clips spaced a max of 48 in. OC. RSIC-1 clips secured to alternating trusses with No. 8 x 1-5/8 in. fine thread screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clips for use with 2-9/16 in. wide furring channels. Adjoining channels are overlapped as described in Item a. 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.

PAC INTERNATIONAL L L C — Type RSIC-1

7. Gypsum Board* — Two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer attached to furring channels with 1 in. Type S screws spaced 12 in. OC, starting 1-1/2 in. and 6 in. from side joists. Butt joints of base layer staggered minimum 24 in. Side joints of base layer centered between joists. Face layer attached to

furring channels with 1-5/8 in. Type S screws spaced 8 in. OC, starting 1-1/2 in. and 4 in. from side joints. Butt joints of face layer staggered minimum 24 in. OC. Side joints of face layer centered between joists and staggered 24 in. from base layer side joints.

CABOT MANUFACTURING ULC — 5/8 in. Type C.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C.

8. **Batts and Blankets*** — Mineral wool or glass fiber insulation, min 3-1/2 in. thick, bearing the UL Classification Marking for Surface Burning Characteristics. suspended in the concealed space with min 18 ga steel wires attached to the top chord of joists spaced nominally 18 in. OC.

9. **Joint System** — Not Shown — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints.

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