

**Design No. P518
BXUV.P518
Fire-resistance Ratings - ANSI/UL 263**

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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

BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

[See General Information for Fire-resistance Ratings - ANSI/UL 263](#)

[See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada](#)

Design No. P518

July 01, 2014

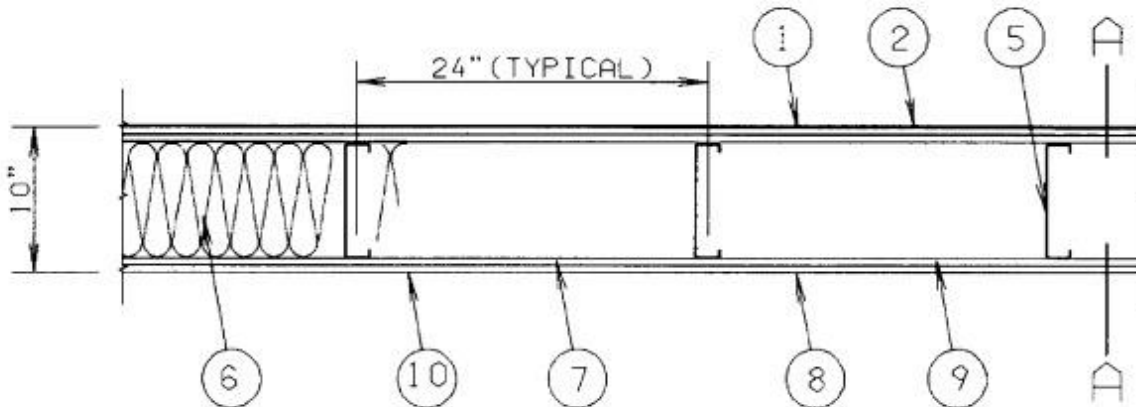
Restrained Assembly Rating — 1 Hr.

Unrestrained Assembly Rating — 1 Hr.

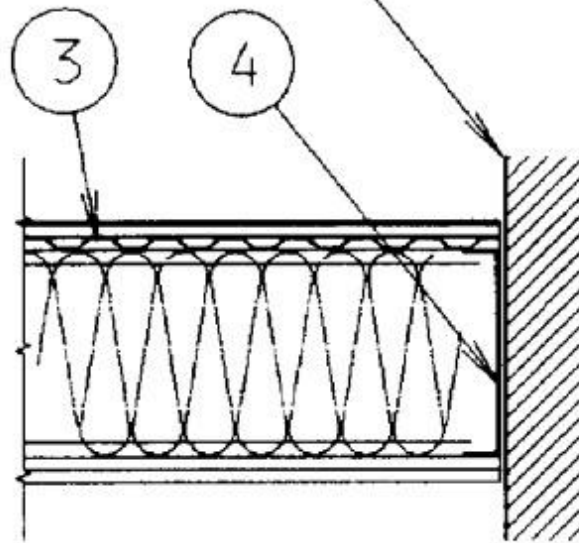
Unrestrained Beam Rating — 1 Hr.

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.**



PERIPHERY STRUCTURAL SUPPORT ELEMENTS



SEC A-A

1. Roof Covering* — Consisting of hot mopped or cold application materials compatible with insulation(s) described herein which provide Class A, B or C coverings. See Roofing Materials and Systems Directory-Roof Covering Materials (TEVT).

1A. Metal Roof Deck Panels — (Not shown) — In addition to or in lieu of Item 1, the roof covering may consist of a mechanically fastened metal roof deck panel assembly. See Fire Resistance Directory-Metal Roof Deck Panels (CETW).

1B. In lieu of Item 1, roof covering consisting of single-ply Roofing Membrane* — that is either ballasted, adhered or mechanically attached as permitted under the respective classified company's Classification. See Fire Resistance Directory-Roofing Membranes (CHCI).

2. Gypsum Sheathing — supplied in sheet nom 2 by 4 ft to 4 by 12 ft by long by min 1/2 in. thick gypsum sheathing installed perpendicular to steel roof deck with end joints of adjacent rows staggered 2 ft. Sheathing attached to steel roof deck with Type S, 1-7/8 in. long bugle head steel screws spaced 24 in. OC in both directions.

3. Steel Roof Deck — (Unclassified) — Nom 30 in. wide, corrugated, No. 28 MSG galv steel, min. 9/16 in. deep with 2-1/2 in. corrugation pitch. The deck shall be attached to each steel joist with No. 8-18 by 5/8 in. long self-drilling steel screws located at the side laps of each unit and at the center of each unit, edges at steel channel attached 8 in. OC. Units shall be overlapped at ends a min of 1-1/2 in. or **Classified Steel Floor and Form Units*** — Noncomposite, min. 9/16 in. deep, min gauge is 28 MSG. Attached to each steel joist with No. 8-18 by 5/8 in. long self-drilling steel screws located at the side laps of each unit and at the center of each unit, edges at steel channel attached 8 in. OC. Units shall be overlapped at ends a min of 1-1/2 in.

ASC STEEL DECK, DIV OF ASC PROFILES L L C — 36 in. wide, Types BH-36, BHN-36, BHN-35-1/4, DGB-36, B-36, BN-36, BN-35-1/4, C0.9-32, and C1.4-32. All units may be galvanized or Prime Shield™. Non-cellular decks may be vented designated with a "V" suffix to the product name.

VERCO DECKING INC - A NUCOR CO — Types PLB, HSB, and Vercor ptd/ptd or galv. units.

VULCRAFT, DIV OF NUCOR CORP — Types 1.5B, 0.6C, 1.0C, 1.3C; Types BW, B High Strength, BW High Strength, TF-75, -150, TV-75, TF S3, TV S3.

3A. Plywood Sheathing (As an alternate to Items 2 and 3) — 1/2 in. thick wood structural panels min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered. The plywood shall be attached to each steel joist with 1-3/8 in. long ballistic point nails spaced 8 in. OC at the edges and in the field.

3B. **Mineral and Fiber Board* (As an alternate to Items 2, 3 and 3A)** — One layer of min 1 in. thick by 24 in. wide boards, installed with long dimension perpendicular to joists (Item 5) with joints staggered. Mechanically fastened to each steel joist with pneumatically driven 2-1/2 in. long and 0.1 in. diam steel coil pins spaced at 6 in. OC max.

HOMASOTE CO — Type FireStall

3C. **Building Units* — (Optional, for installation over Items 2 and 3, Item 3A or Item 3B)** — Expanded foamed plastic insulation boards faced on the top surface with nailbase. Units to be installed with long dimension perpendicular to joists (Item 5).

HOMASOTE CO — Type NCFR/Thermasote

4. **Roof Joist Track** — Cold formed channels 8-3/16 in. deep with min 1-1/4 in. flanges, fabricated from No. 18 gauge or heavier ptd or galv steel. Used to provide supporting surface between roof joists (Item 5) and the periphery structural support elements. Ends of roof joists secured to roof tracks with 1 in. long, 1/8 in. fillet welds at top and bottom joist flanges.

5. **Roof Joists** — Cee-shaped sections, min 8 in. deep with 1-9/16 in. flanges and 9/16 in. lips, made from No. 18 gauge or heavier ptd or galv steel of 33 KSI min yield strength. Designed in accordance with the American Iron and Steel Institute specifications adopted August 1986. Joists spaced 24 in. OC max.

5A. **Structural Steel Members (Roof Joists)** — (Not Shown)- As an alternate to Item 5, light gauge steel truss system manufactured from cold-formed, galvanized steel chord and web members conforming to ASTM A653 Grade 33 or higher yield strength. Steel thickness of truss chords shall be min of 18 ga. and web sections a min of 20 ga. Truss members welded together. Truss chord and web members to be designed in accordance with the American Iron and Steel Institute's Specification for the Design of Cold-Formed Steel Structural Members, most current edition. Trusses spaced a max of 24 in. OC and having a min depth of 8 in. Where the truss intersects with the interior face of the exterior wall, the min truss depth shall be 12 in. with no min slope.

5B. **Angles- (Not Shown)** — (Optional)- Min 1-1/2 in. by 1-1/2 in. by 18 ga. angles welded to top corner of Item 5A and min 1-1/2 in. by 3 in. by 18 ga. angles welded to bottom corners of Item 5A. All angles, top and bottom corners, welded with 1/16 in. by 1 in. long welds to provide supporting surface between roof joists, Item 5A, and periphery support elements.

6. **Batts and Blankets*** — Nom 24 by 48 by 8 in. thick or 24 in. wide rolls of glass fiber insulation. Each batt placed directly on top of inner layer gypsum wallboard (Item 8) between roof joists. Density of glass fiber insulation is nominal 0.53 pcf. . See **Batts and Blankets** (BKNV or BZJZ) categories for names of Classified companies.

7. **Bridging** — Min 1-1/2 in. wide, No. 18 MSG galv steel continuous strap. Bridging required at the bottom flange of roof joists at midspan. Bridging secured to the bottom flange of each joist with one No. 8-18 by 5/8 in. long self-drilling steel screw and with two screws at the end of bridging strap.

8. **Gypsum Board*** — 1/2 in. thick, 4 ft wide. Base layer installed with long dimension perpendicular to roof joists with end joints centered on joists and attached with 1-1/4 in. long, Type S-12 bugle head steel screws spaced 8 in. OC at end joints of the board and 12 in. OC in the field. Screws located 1 in. from board side edges and 1/2 in. from butted ends. Face layer installed with long dimension parallel and centered over ceiling joists. Face layer fastened to joists through inner layer with 1-7/8 in. long Type S-12 bugle head steel screws spaced 12 in. OC in the field and 8 in. OC at perimeter. Bottom layer end joints fastened to inner layer with 1-1/2 in. long Type G bugle head steel screws spaced 8 in. OC and located at 1 in. from board edges.

AMERICAN GYPSUM CO — Type AG-C

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

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

UNITED STATES GYPSUM CO — Type C.

9. **Vapor Barrier** — Latex Primer Sealer, ASTM designation #D1653. Applied to the back surface of the inner layer of wallboard at 39 oz per 100 sq ft.

10. **Finishing System** — Wallboard joints exposed or covered with fiber tape and joint compound. As an option, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of gypsum board. **Alternate Ceiling Membrane** Not Shown.

11. **Hanger Wire** — For use with Item 12 - No. 12 SWG galv steel wire secured to steel joists spaced a max 48 in. O.C.

12. **Steel Framing Members** —

a. **Main runners** — Installed perpendicular to Structural Steel Members, - Nom 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC. Main runners hung a min of 2 in. from bottom chord of Structural Steel Members with 12 SWG galv steel wire. Wires located a max of 48 in. OC.

b. **Main runners** — Nom 4 ft long, 15/16 in. or 1-1/2 in. wide face or cross channels, nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or channels used at 8 in. from each side of butted wallboard end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.

c. **Wall angles or channels** — Used to support steel framing member ends and for screw-attachment of the gypsum wallboard - Painted or galvanized steel angles with 1 in. legs or channels with 1 in. legs and 1-9/16 in. deep, attached to walls at perimeter of ceiling with fasteners 16 in. OC.

CGC INC — Type DGL or RX.

USG INTERIORS LLC — Type DGL or RX.

13. **Gypsum Board*** — For use with **Steel Framing Members*** (Item 12) - Two layers of nominal 1/2 in. thick by 48 in. wide boards. Inner layer installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Inner layer fastened to cross tees with 1-1/4 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. End joints of adjacent wallboard sheets shall be staggered not less than 4 ft OC. Outer layer attached to the cross tees through inner layer using 1-7/8 in. long Type S bugle-head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints to be centered along cross tees and be offset a min of 32 in. from end joints of inner layer. Rows of screws on both sides of butted end joints of each layer shall be located 3/8 to 1/2 in. from end joints. Butted side joints of outer layer to be offset a min of 18 in. from butted side joints of inner layer. Joints treated as described in Item 10.

CGC INC — Type C.

UNITED STATES GYPSUM CO — Type C.

USG MEXICO S A DE C V — Type C.

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