



BXUVC.M518 Fire Resistance Ratings

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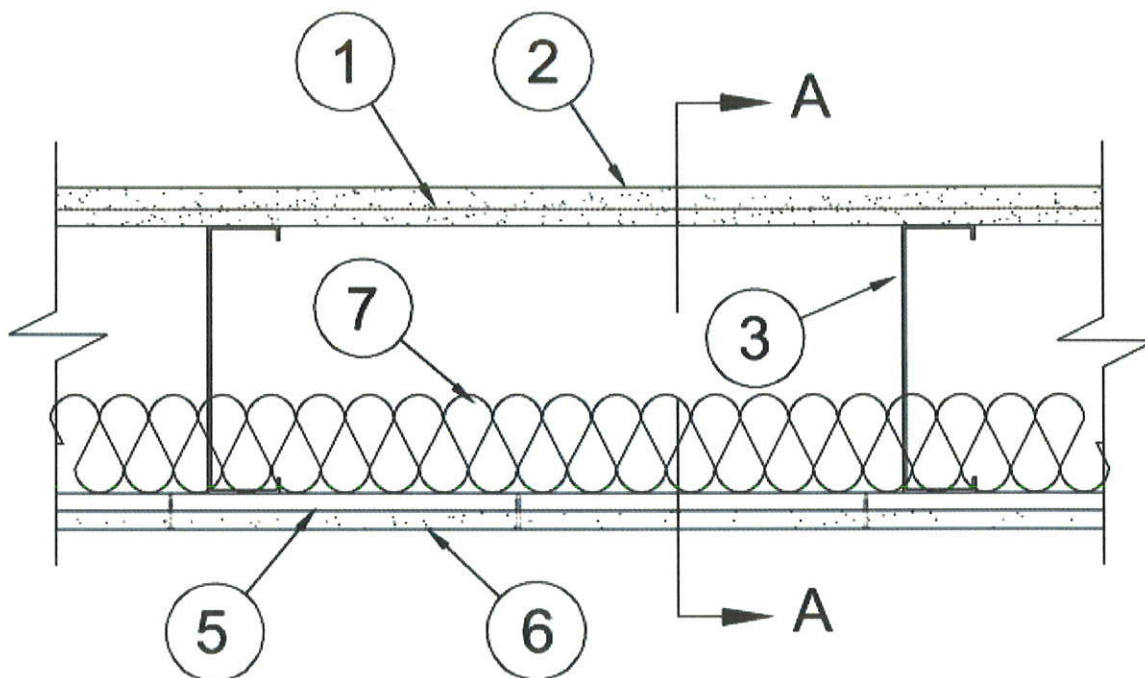
Fire Resistance Ratings

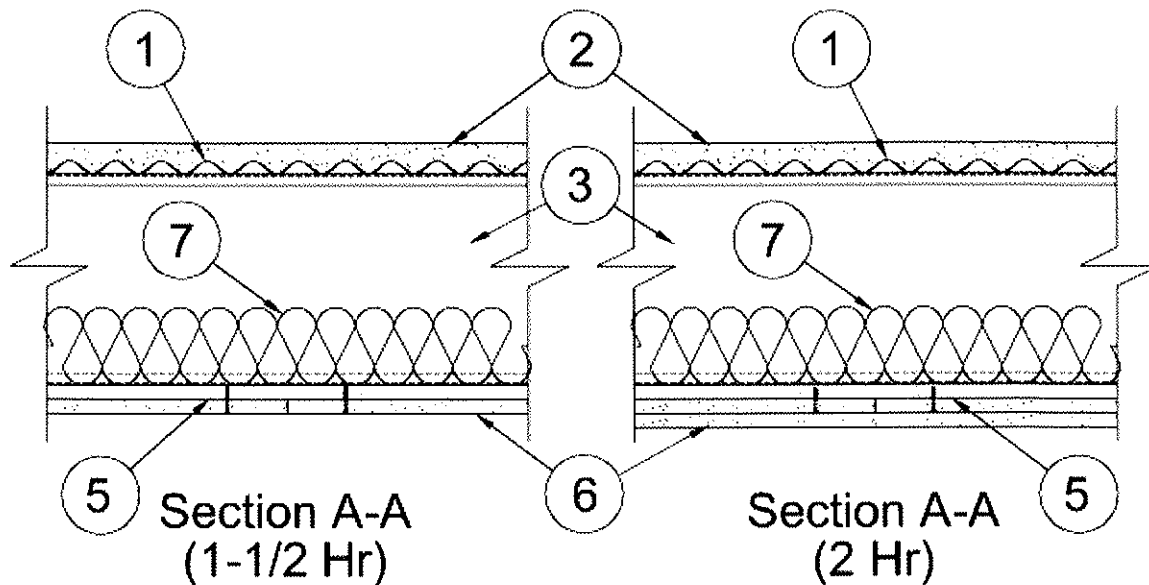
[See General Information for Fire Resistance Ratings](#)

Design No. M518

December 11, 2012

Unrestrained Assembly Rating - 1, 1-1/2 and 2 h (See Items 5A and 6)





1. **Steel Deck** — Minimum 14 mm deep, 0.79 mm thick (22 gauge) galvanized corrugated steel deck. Overlapped one corrugation at each side and attached to each joist with 19 mm long No.10-16 self-drilling screws at each side joint and no more than 305 mm OC.

2. **Floor Topping Mixtures** — (CCOXC). Minimum compressive strength of 25 MPa. Minimum thickness of 25 mm as measured from the top plane of steel deck. 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 0.122 Kg/m².

HACKER INDUSTRIES INC — Firm-Fill CMD (formerly Firm-Fill CSD)

3. **Structural Steel Members** — Channel-shaped, minimum 235 mm deep. Fabricated from minimum 1.44 mm thick (16 gauge) galvanized steel, having 345 MPa yield strength. Joists spaced at maximum 610 mm OC. Joists attached to joist rim with three 19 mm long No.10 self-drilling screws at the tabs provided in the joist rim web. At joist rim splices bearing on supports, joists rims are connected using an overlapping section of a 305 mm long splice plate (a joist piece), with four 19 mm long No.10 self-drilling screws to each rim piece.

4. **Joist Bridging** — Not shown — Installed immediately after joists are erected and before construction loads are applied. The bridging, consisting of 1.12 mm thick (18 gauge) galvanized steel, 64 mm wide by 552 mm long structural bridging staggered between the steel joists attached to the bottom joist flange with one 19 mm long No.10 self-drilling screw at each end tab of bridging. The solid bridging consists of cut to length joist sections placed between outer joists and at center joist with maximum spacing of 2.44 m OC. The solid bridging attached to the joists with a 38 mm by 38 mm by 179 mm support clip and a 102 mm by 38 mm by 179 mm support clip with two, 19 mm long No.10 screws per leg per clip.

5. **Resilient Channels** — 13 mm deep, formed from 0.58 mm thick (25 gauge) galvanized steel, spaced 305 mm OC perpendicular to joists. Channels also installed at 75 mm from opposite sides of all wallboard butt-joints. Channel splices overlapped by 152 mm. Channels secured to each joist with 13 mm long wafer head screws.

5A. **Steel Framing Members** — Not Shown - (CIKVC) — For the 1 Hour Rating Only and as an alternate to Item 5

a. **Furring Channels** — Formed from 0.58 mm thick (25 gauge) galvanized steel, 65 mm or 69 mm wide by 23 mm deep, spaced 305 mm OC perpendicular to joists. Channels secured to joists as described in Item b. Ends of adjoining channels overlapped 152 mm and tied together with double strand of No. 18 SWG galvanized steel wire near each end of overlap.

b. **Steel Framing Members** — Used to attach furring channels (Item a) to joists (Item 3). Clips spaced 1220 mm. OC and secured to the bottom chord of alternating joists with minimum 42 mm long No. 8 self-drilling, self-tapping, bugle, flat or hex head screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clips for use with 65 mm wide furring channels. RSIC-1 (2.75) clips for use with 69 mm wide furring channels. Adjoining channels are overlapped as described in Item a. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 6. Two layers of gypsum board required as described in Item 6.

PAC INTERNATIONAL INC — Types RSIC-1, RSIC-1 (2.75).

▪ **6. Gypsum Board** — (CKNXC). **For the 1-1/2 Hour Rating** — Nominal 15.9 mm thick, 1220 mm wide gypsum panels. When resilient channels (Item 5) are used, gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 25 mm long Type S bugle-head screws spaced 203 mm OC in both the field and the perimeter, and 25 mm and 102 mm from side edges of the board with side joints staggered 102 mm from center of joist. **For the 2 Hour Rating** — Nominal 15.9 mm thick, 1220 mm wide gypsum panels. Base layer installed with long dimension perpendicular to resilient channels (Item 5). Gypsum panels secured with 25 mm long Type S bugle-head screws spaced 203 mm OC in both the field and the perimeter, and 25 mm and 102 mm from side edges of the board with side joints staggered 102 mm from center of joist. Face layer installed with long dimension perpendicular to resilient channels with joints offset 610 mm. from base layer joints. Gypsum panels secured with 42 mm long Type S bugle-head screws spaced 102 mm OC in both the field and the perimeter, and 25 mm and 102 mm from side edges of the board. At the butt joint 38 mm long Type G screws spaced 203mm. OC and 25 mm and 102 mm from the side edges of the board. When **Steel Framing Members** (Item 5A) are used, fire rating is limited to 1 Hour and two layers of nominal 15.9 mm thick, 1220 mm wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer attached to furring channels (Item 5B) as described for the 2 Hour Rating. Butted end joints of base layer shall be staggered minimum 610 mm within the assembly, and occur midway between the continuous furring channels. Each end of each base layer gypsum panel shall be supported by a single length of furring channel equal to the width of the gypsum panel plus 150 mm on each end. The two support furring channels shall be spaced approximately 90 mm OC, and be attached to underside of the joist with one RSIC-1 clip at each end of the channel. Face layer attached to furring channels and base layer as described above for the 2 Hour Rating.

CGC INC — Type C.

UNITED STATES GYPSUM CO — Type C.

7. Batts and Blankets — Mineral wool or glass fiber insulation, minimum 90 mm thick, bearing the ULC Listing Mark for Surface Burning Characteristics, having a flame spread value of 25 or less and a smoke value of 50 or less. Insulation fitted in the concealed space, draped over the resilient channel/gypsum panel or Steel Framing Members/gypsum panel ceiling membrane.

8. Joint System — Not Shown — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw heads; paper tape, 50 mm wide, embedded in first layer of compound over all joints.

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