

BXUVC.I532 Fire-resistance Ratings

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BXUVC - Fire-resistance Ratings

[See General Information for Fire-resistance Ratings](#)

Design No. I532

November 23, 2016

Unrestrained Assembly Rating – 1, 2 and 3 h

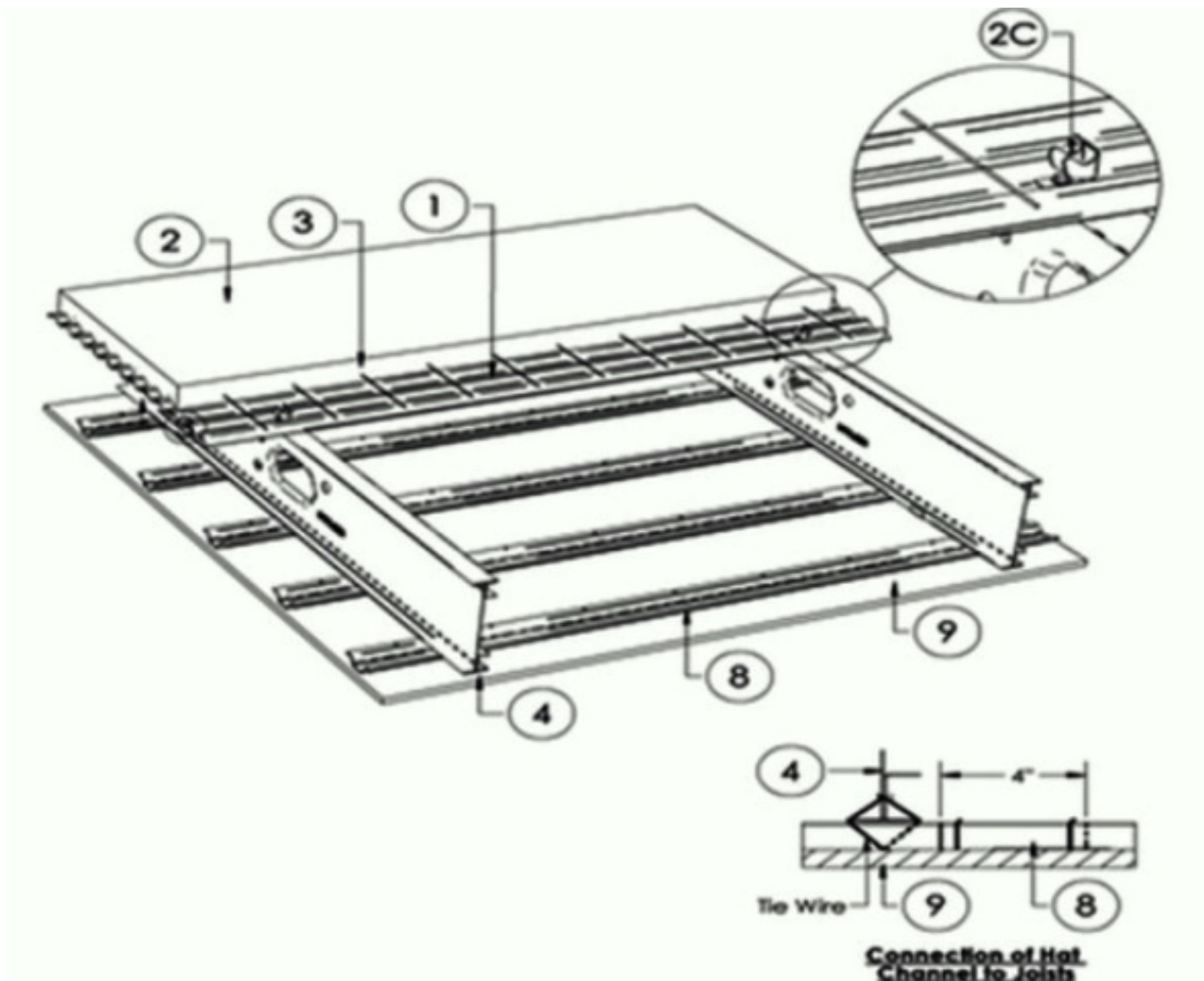
(3 Hr rating is not applicable when Optional Beam is used)

Restrained Assembly Rating – 1, 2 and 3 h

(3 Hr rating is not applicable when Optional Beam is used)

Unrestrained Beam Ratings – 1 and 2 Hr.

Load Restricted – Optional Beam evaluated in accordance with Working Stress Design methods, for use under Limit States Design methods; refer to information under Guide BXUVC.



Beam - (Not Shown) - W250x33, min size. The underside of the bottom flange of the beam shall not be lower than the

underside of the bottom of the TotalJoist™ Structural Component (Item 4.).

1. **Steel Deck** — Min 14 mm. deep, 22 MSG galv corrugated fluted steel deck. Overlapped one corrugation at each side and attached to each joist with 19 mm long #10-16 self-drilling, self-tapping screws 254 mm OC max. At steel deck overlap over joist three 19 mm long #10-16 self-drilling, self-tapping screws are installed into the joist one screw in the center flute and one on each adjacent flute.

2. **Concrete** — Normal Weight Concrete with carbonate aggregate, 2400 kg/m³ unit weight, 20 MPa minimum compressive strength. Minimum thickness shall be 56 mm as measured from the top plane of the deck.

3. **Welded Wire Fabric** — Minimum 150 mm x 150 mm MW18.7 x MW18.7 placed in the middle of the concrete (Item 2).

3A. **Fiber Reinforcement** — As an alternate to Item 3. Engineered synthetic fibers added to concrete mix to control shrinkage cracks in concrete. See Fiber Reinforcement (CBXQC) Category for rate that fibers are added to concrete mix.

BASF CONSTRUCTION CHEMICALS L L C — Type MasterfiberMAC Matrix, MasterFiber MAC 2200CB, MasterFiber MAC 100, MasterFiber MAC 100 Plus.

FORTA CORP — Type Forta Ferro fiber.

■ **4. Structural Components** — (CIZTC). TotalJoist™ Joist, minimum 205 mm deep, minimum 16 ga. thick, spaced maximum 1220 mm OC. Web stiffeners screwed to both ends of joists using 4 #12, 25 mm long self-drilling, self-tapping screws and to steel C-shaped assembly tracks using 3 #2, 25 mm long self-drilling, self-tapping screws. Alternatively, in lieu of using screws the web stiffeners may be welded to the joist and the C-shaped assembly track.

ISPAN SYSTEMS LP — TotalJoist™ Joist

■ **5. Multi-Shear Connectors** — TotalJoist™ MultiShear Connectors installed through the steel deck to the top flange of the Joist with 1 #12-25 mm long self-drilling, self-tapping Screw. MultiShear Connectors are installed to develop composite action between the joist and the concrete. MultiShear Connectors spaced at 305 mm OC., along the length of the joist and located adjacent to the web of the joist.

ISPAN SYSTEMS LP — TotalJoist™ MultiShear Connector

■ **6. Bridging*** — Total Joist™ Snap-On Bridging, 48 mm. by 16 mm. by minimum 20 GA. bridging attached to bottom chords on each joist and located 2440 mm. apart or at mid-point of joist for shorter spans. Bridging attached to chords of each joist using 1 #12, 19 mm. long, self drilling, self-tapping screw.

ISPAN SYSTEMS LP — Total Joist™ Snap-On Bridging.

■ **6A. Alternative Bridging** — Total Joist™ Bridging, 48 mm. by 16 mm. by minimum 20 GA. Bridging installed perpendicular to joists through web holes and located 2440 mm. apart or at mid-point of joist for shorter spans. Bridging attached to flange of web hole in each joist using 1 hex head, self-drilling, self-tapping #10 screw, 19 mm. long. Alternatively, bridging may be attached to joists using minimum 19 mm. by 19 mm. by 20 GA. clip angle. Clip angle fastened to joist web and to bridging using 1 hex head, self-drilling, self-tapping #10 screw, 19 mm. long.

ISPAN SYSTEMS LP — Total Joist™ Bridging.

■ **7. Blocking*** — Total Joist™ Blocking, 18 GA. Blocking attached between joists using 2-#12, 25.4 mm. long, self drilling screws. Blocking spaced at every fifth bay and at end bays.

ISPAN SYSTEMS LP — Total Joist™ Blocking

■ **7A. Alternative Blocking (Not shown)** — TotalJoist™ 18 ga. cut to fit the space between the two adjacent joists

and attached to joists with 16 ga. 150 mm by 75 mm angle connected to blocking and joist with 2 #12-14, 25 mm long. self-drilling, self-tapping screws on each leg of the angle. Blocking spaced at every fifth bay and at end bays.

ISPAN SYSTEMS LP — Total Joist™ Joist

- **7B. Alternative Blocking (not shown)** — Cross bridging with TotalJoist™ Bridging, 48 mm. by 16 mm by minimum 20 ga. cut to fit the space between the two adjacent joists and attached to joists with 1 #10-19 mm long self-drilling, self-tapping screw. Blocking spaced at every fifth bay and at end bays.

ISPAN SYSTEMS LP — TotalJoist™ Bridging

8. Resilient Channels — Minimum 25 GA thick, 22 mm deep hat-shaped galvanized steel channels. Channels shall be spaced maximum 610 mm apart and attached to the bottom flange of each joist with two double strand 18 gauge steel wire. At locations where gypsum board end joints occur, additional resilient channels shall be installed to provide screw attachments for the gypsum board ends. These additional channels shall be positioned so that the distance from the end of the board to the centre of the first channel is 75 mm and from the board end to the centre of the next channel is 533 mm. Joints in channels shall be overlapped 100 mm. and shall be located directly below the joist. Channels shall be cut 12.7 mm short of the end supports.

- **9. Wallboard** — (CKNXC). Nominal 16 mm thick, 1220 mm wide gypsum board installed with long dimension perpendicular to resilient channels. Gypsum board shall be attached to resilient channels using 25 mm long Type S drywall screws, spaced 305 mm OC in the field of each board. At the side joints, screws shall be located 25 mm and 150 mm from the long edge. At the end joints, screws shall be located 75 mm and 300 mm from the board end. All end joints shall be completed backed by 3 in. wide strips of gypsum board centrally positioned over the joints.

CGC INC

10. Joint System — (Not shown). Paper tape embedded in joint compound over joints and covered with 2 layers of compound with edges feathered out. Wallboard screw heads covered with 2 layers of compound.

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Last Updated on 2016-11-23

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