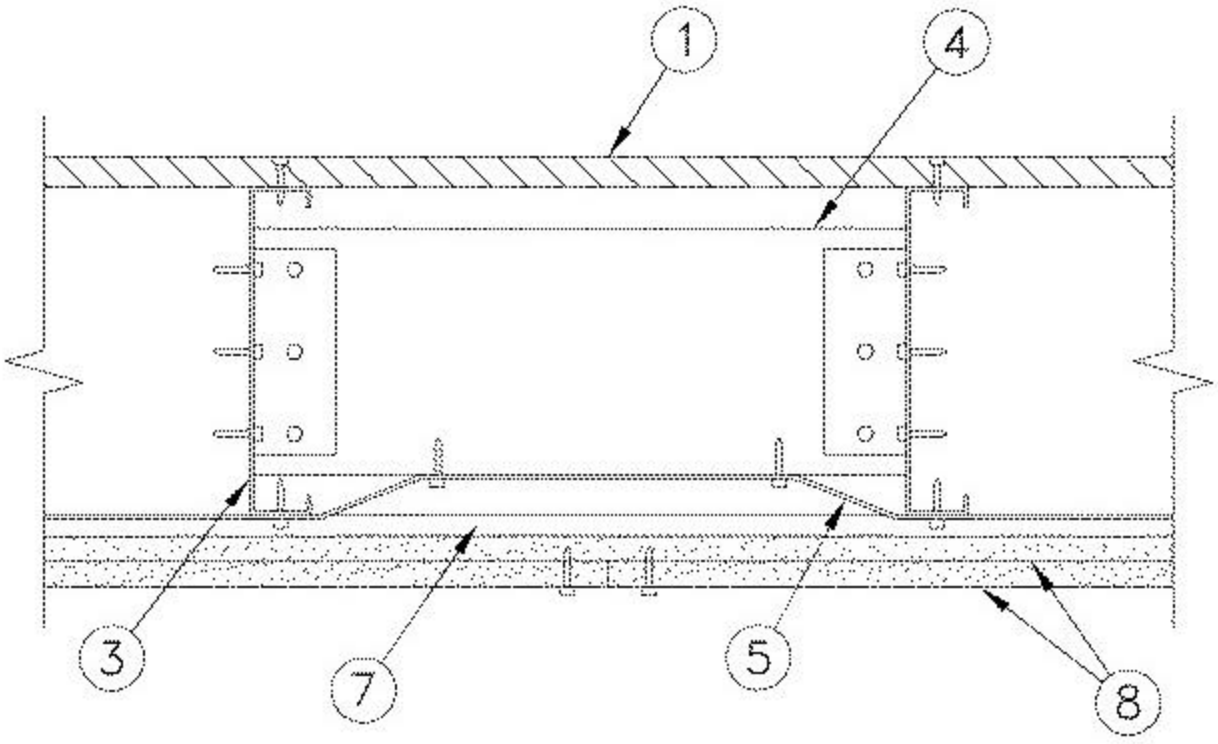
Fire Resistance Ratings

See General Information for Fire Resistance Ratings

Design No. M511
March 07, 2005

Unrestrained Assembly Rating - 45 min, 1 h (See Item 8 Table)



1. **Finish Flooring —** Nom. 15.9 mm or 19 mm thick (See Item 8. Table) T & G wood structural panels, min grade "underlayment" or "single floor" (See Item 8 Table). Face grain of panels or strength axis of panel to be perpendicular to joists with joints staggered. Panels secured to joists with No. 10 by 32 mm long screws spaced 152 mm OC along joints and 305 mm OC in the field. If sub flooring (Item 2.)

is used, joints in the sub flooring to be offset a min of 406 mm from joints in the finish flooring.

2. **Sub-flooring (optional) —** Nom 15.9 mm or 19 mm (See Item 8. Table) thick plywood, min grade "C-D" or "Sheathing" (See Item 8 Table). Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered. Panels secured to joists with No. 10 by 32 mm long screws spaced 152 mm OC along joints and 305 OC in the field.

3. **Steel Joist —** Non-Composite Design — Spaced 406 mm OC or 610 mm OC (See Item 8 Table). Channel-shaped, min 203 mm deep with min 41 mm flanges and min 14 mm stiffening flanges. Fabricated from nominal base metal thickness of min 1.15 mm galv steel. Min yield strength of steel is 230 MPa.

4. **Blocking —** Channel-shaped 152 mm deep with min 41 mm flanges and 14 mm stiffening flanges. Fabricated from nominal base metal thickness of 1.15 mm galv steel. Min yield strength of steel is 230 MPa. Spaced at max 1930 mm OC along the span of the steel joist. Blocking to be placed between steel joist at max 3048 mm OC. A 38 by 38 by 140 mm long angle clip shall be used to connect web of Steel Joist Blocking with 19 mm long No. 8 self-tapping screws. A min of six screws used with each angle clip.

5. **Bridging —** Flat steel strap 52 mm wide fabricated from nominal base metal thickness of 1.444 mm galv steel located max 1930 mm OC perpendicular to the joists. The flat strap is connected to the bottom flange of the Steel Joist (Item 3) with a min of one No. 8 self-tapping screw.

6. **Connecting Clip Section —** Channel-shaped 90 mm deep with min 41 mm flanges and 14 mm stiffening flanges fabricated from nominal base metal thickness of 1.15 mm galv steel. Clip Section used to fasten Steel Joists to joist headers. The Clip Section is connected using a min of six No. 8 by 19 mm long self-tapping screws at each connection.

7. **Resilient Channels —** (See Item 8 Table) — Formed of nominal base metal thickness of 0.481 mm galv steel, 64 mm. wide by 12.7 mm deep, spaced 406 mm OC, connected perpendicular to steel joist. Channels secured to bottom flange of each steel joist with Type S8 by 19 mm long screws.

• 8. **Gypsum Wallboard —** (CCN: CKNXC). One or two layers of nominal 12.7 mm or 15.9 mm thick by 1220 mm wide boards (See Item 8 Table).

8a. One Layer. Sheets installed with long dimension perpendicular to resilient channel. Sheets attached to the resilient channel with 32 mm long Type S bugle-head screws spaced 305 mm OC along butted end-

joints and in the field. Butted end-joints staggered min 1220 mm in adjacent rows. Screws located min 38 mm from both side-joints and end-joints. Butt end-joints to be located between two resilient channels (Item 7) and each end supported by an additional resilient channel min 1676 mm long. Additional resilient channels attached to the steel joist as specified in Item 7.

8b. Two Layers. Sheets installed with long dimension perpendicular to steel joist. Base layer attached to the steel joist using 32 mm long Type S bugle-head screws spaced 305 mm OC along butted end-joints and in the field. Base layer butted end-joints staggered min 1220 mm in adjacent rows. Screws in base layer located min 10 mm from end-joints and 38 mm from side joints. Face layer secured to steel joist with 38 mm long Type S bugle-head steel screws spaced 305 mm OC at the side-joints and in the field. Face layer side-joints offset min 610 mm from base layer side-joints. Face layer end-joints to be offset 914 mm from base layer end-joints. Face layer end-joints to occur in the middle of two adjacent steel joist. Type G 38 mm long screws spaced min 305 mm OC used to attach face layer end-joints to the base layer, screw located min 38 mm from end-joint.

Joints treated as described in Item 10.

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Rating	Joist Spacing	Flooring	Insulation	Resilient Channel	Gypsum Wall board
45 Min	406 mm OC	15.9 mm thick 1 layer Sub-Floor and 1 layer 15.9 mm thick Finish Floor	Mineral Wool Batt	610 mm OC	15.9 mm thick 1 layer
	610 mm OC	19 mm thick1 layer Sub-Floor	Glass fibre Batt	406 mm OC	12.7 mm thick 2 layers
	610 mm OC	19 mm thick 1 layer Sub-Floor	(None)	(None)	12.7 mm thick 2 layers
1 Hour	406 mm OC	15.9 mm thick1 layer Sub-Floor	(None)	(None)	12.7 mm2 layers

9. **Batts and Blankets —** (not shown) (See Item 8 Table) - Mineral wool with a density of 32.2 kg/m^3 or glass fibre insulation with density 10.2 kg/m^3. Insulation 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 wallboard ceiling membrane cut to fit tightly between webs of the joists.

10. **Joint System —** (not shown) — Paper tape embedded in joint compound over joints and covered with additional compound. Exposed screw heads covered with compound. Edges of compound feathered out.

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