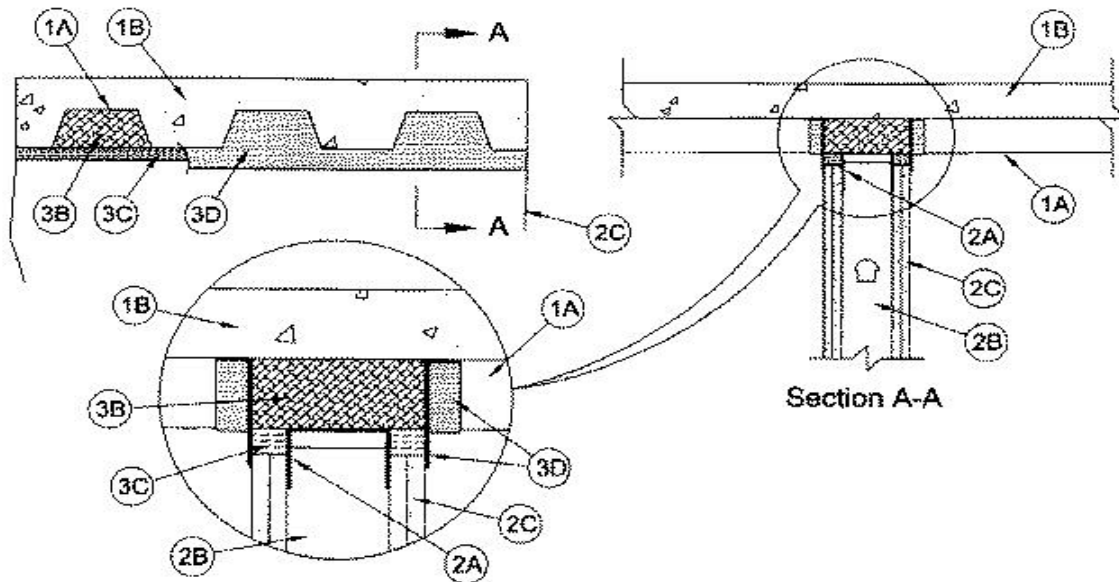


ULC SYSTEM No. HW39

F Rating	- 2 h
FT Rating	- 1-1/2 h
FH and FTH Ratings	- 0 h

Joint Width – 50 mm Maximum
Movement Capabilities – 25% Compression and Extension



1. Floor Assembly – The fire-rated fluted steel deck/concrete floor assembly shall be constructed of the materials and in the manner described in the individual Floor-Ceiling design in the ULC List of Equipment and Materials, and shall include the following construction features:

(a) **Steel Floor and Form Units** – Maximum 76 mm deep galvanized steel fluted units.

(b) **Concrete** – Minimum 64 mm thick reinforced concrete as measured from the top plane of the floor units.

1A. Roof Assembly (not shown) - As an alternate to the floor assembly, a fire-rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual R900 Roof and Ceiling Assemblies in the ULC List of Equipment and Materials, Fire Resistance. The roof assembly shall include the following construction features:

(a) **Steel Roof Deck** – Maximum 76 mm deep galvanized steel fluted roof deck.

(b) **Roof Insulation** – Minimum 63 mm thick poured insulating concrete, as measured from the top plane of the roof deck.

The hourly rating of the floor or roof assembly shall be equal to or greater than the hourly rating of the wall assembly.

2. Wall Assembly – The 2 h fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner described in the individual Wall or Partition Design in the ULC List of Equipment and Materials, and shall include the following construction features:

(a) **Steel Floor and Ceiling Runners** – Floor and ceiling runners of wall assembly shall consist of galvanized steel channels sized to accommodate steel studs (Item 2b). Ceiling runner to be provided with 75 mm flanges. Ceiling runner installed within the U-shaped

deflection channel (Item 3a) with 25 mm gap maintained between the top of the ceiling runner and top of the deflection channel. When deflection channel (Item 3a) is not used, ceiling runner is secured to steel floor deck with steel fasteners or welds spaced 610 mm OC.

(b) Studs – Steel studs to be minimum 89 mm wide. Studs cut 12 to 19 mm less in length than assembly height with bottom nesting in and resting on floor runner and with top nesting in ceiling runner without attachment. Stud spacing not to exceed 610 mm OC.

(c) Gypsum Board – Gypsum board sheets installed to be a minimum total thickness of 32 mm on each side of wall. Wall to be constructed as specified in the individual Wall or Partition Design in the ULC List of Equipment and Materials, except that a nominal 50 mm gap shall be maintained between the top of the gypsum board and the bottom of the steel floor units, and the top row of screws shall be installed into the studs 89 mm below the valleys of the steel floor units.

3. Joint System – Maximum separation between bottom of floor and top of wall is 50 mm. The joint system is designed to accommodate a maximum 25% compression or extension from its installed width. The joint system consists of an optional deflection channel, spray-applied fire resistive material, forming material and a firestop material as follows:

(a) Deflection Channel – (Optional, Not Shown) A nominal 96 mm wide by 51 mm deep minimum 0.6 mm thick steel U-shaped channel. Deflection channel secured to valleys of steel floor units (Item 1a) with steel fasteners or by welds spaced maximum 610 mm OC. The ceiling runner (Item 2a) is installed within the deflection channel to maintain a 25 mm gap between the top of the ceiling runner and the top of the deflection channel. The ceiling runner is not fastened to the deflection channel.

- **(b) Spray-Applied Fire Resistive Material** – (Guide No. 40 U18.6) Minimum 152 mm depth of Type MK-6/HY cementitious mixture installed into the flutes of the steel floor units between the top of the deflection channel and the steel deck flush with each surface of the wall. Prior to the installation of the spray-applied fire resistive material in the flutes of the steel floor units, temporary forms with a thickness equal to the overall thickness of the gypsum board and height equal to the height of the joint opening within the joint opening, installed directly above gypsum board on each side of wall. The spray-applied fire resistive material is mixed with water in accordance with the mixing instructions on the bag and is sprayed and/or trowelled to fill the flute above the wall. The minimum average density of the spray applied fire resistive material shall be 240 kg/m³ with a minimum individual density of 224 kg/m³. For method of density determination, refer to General Information Section under heading “Fire Resistance Ratings”. Steel surfaces must be clean and free of dirt, loose scale and oily deposits.

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(c) Batts and Blankets – Minimum 64 kg/m³ density ULC labelled mineral wool batt are to be cut to 33 mm wide sections and compressed 50 percent in thickness and installed cut edge first to fill the maximum 50 mm gap between the top of the gypsum board and the spray-applied fire resistive material. The mineral wool insulation shall be installed flush with each side of the wall.

- **(d) Firestop System Component** – (Guide No. 40 U19.13) Minimum 3.2 mm wet thickness of A/D FIREBARRIER Seal N/S sprayed or brushed applied to cover the spray-applied fire resistive material and the forming material on each side of the wall. The material shall be installed to overlap a minimum of 13 mm onto gypsum board and steel deck on both sides of wall.

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