

Hilti Corporation
 Design No. HI/BPF 180-04
 Perimeter Fire Barrier System
 Edge of Slab QuickSeal CFS-EOS QS
 ASTM E 2307, CAN/ULC-S115, UL 2079 (Air Leakage Only)
 Table 1.

Edge of Slab QuickSeal, CFS-EOS QS	
F-Rating	3 Hour
T-Rating	41 minute or 3 Hour (see Item 2B)
Cycling	None
Air Leakage	<2.0 SCFM/LF

VERTICAL JOINT

HORIZONTAL JOINT

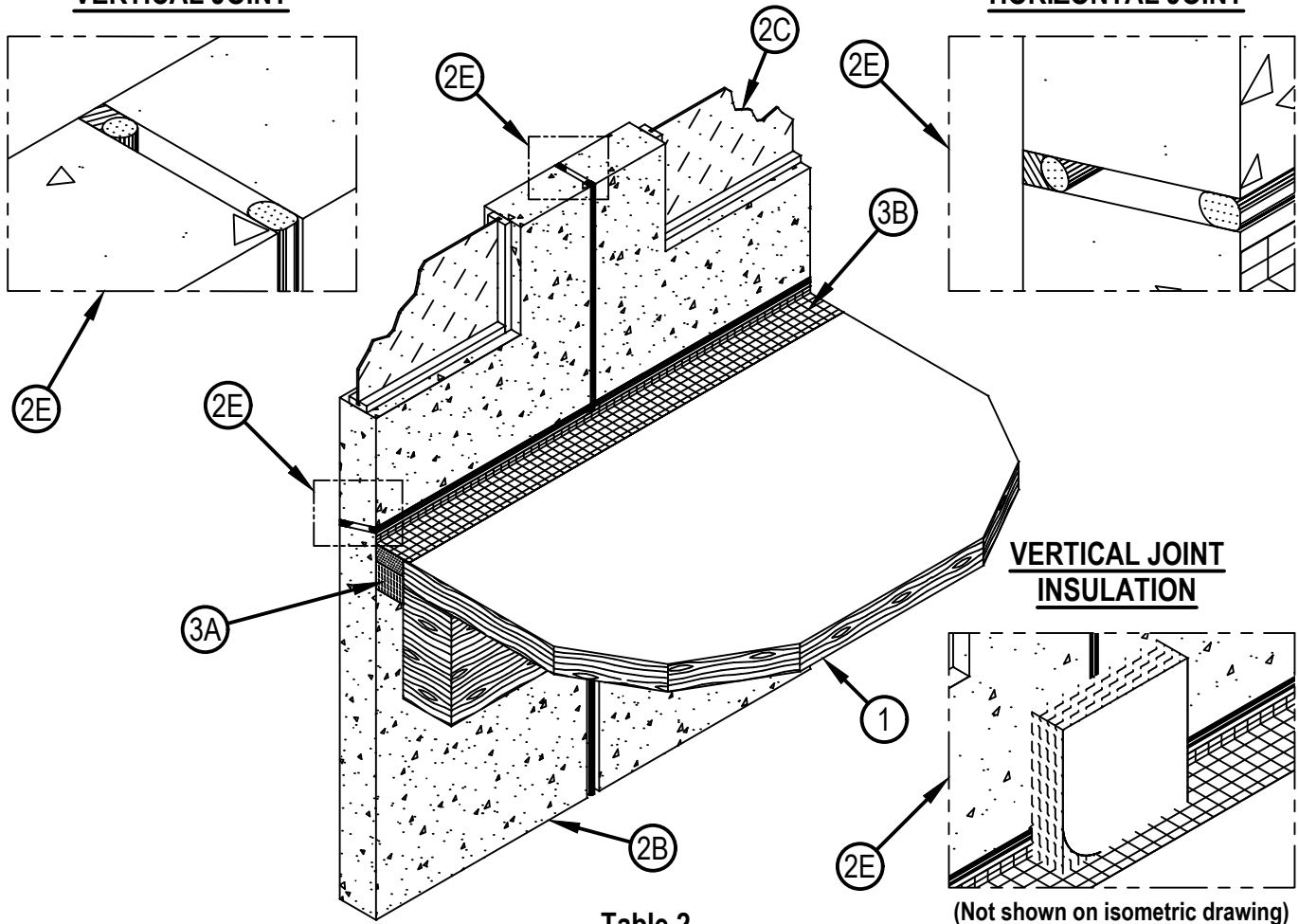


Table 2.

Product	Nominal Joint Width	
	Minimum	Maximum
CFS-EOS QS Small	1-1/2 in.	3 in.
CFS-EOS QS Medium	2 in.	4 in.
CFS-EOS QS Large	3 in.	5 in.

1. MASS TIMBER FLOOR ASSEMBLY: Mass timber floor assembly shall have a min. fire resistance rating of 3 hours to ASTM E119, UL 263, or CAN/ULC-S101, as applicable. Mass timber floor assembly consists of a mass timber floor and a spandrel beam and shall be constructed as follows:

Floor assembly to consist of min. 4 in. (102 mm) thick mass plywood panel (MPP). At the face of the mass plywood panel there is to be a mass plywood spandrel beam having a min. 16 in. (406 mm) depth and a min. 8-1/2 in. (216 mm) thickness.

The total depth of the mass timber floor assembly and spandrel beam at the joint face shall be min. 20 in. (508 mm). Mass timber floor and spandrel beam shall be certified in accordance with ANSI/APA PRG-320 (2018 or later).

A. GYPSUM BOARD (Not Shown) – On the exposed bottom face of the mass timber floor and on the interior vertical face of the spandrel beam, install a min. of three layers of min. 5/8 in. (16 mm) thick, Type X gypsum board. Each layer of gypsum board is to be attached to the mass timber floor assembly (Item 1) in accordance with local Code requirements.

2. CURTAIN WALL ASSEMBLY: The curtain wall assembly shall incorporate the following construction features:

A. MOUNTING ATTACHMENT (Not Shown) – Mounting attachments to consist of steel angle or steel tube secured to precast concrete panels (Item 2B) that engage with steel mounting plates secured to mass timber floor assembly (Item 1). Mounting attachments are to be secured to precast concrete panels and to mass timber floor assembly per the exterior wall manufacturer's instructions. Mounting attachments to be located at the top of floor assembly such that the mounting hardware does not extend below top of floor assembly.

B. PRECAST CONCRETE PANELS – Precast concrete panels (min. 6 in. thick) are made from either lightweight or normal weight concrete with a density of 100 to 150 pcf. Openings in the precast concrete panels can accommodate glass panels (Item 2C) or louvers (Item 2D). There shall be a min. horizontal separation of 24 in. between glass panel or louver openings in precast concrete panels. For the 41 minute T-rating, the opening sill should be a min. 0 in. above the top of the floor assembly. For the 3 hour T-rating, the opening sill shall be a min. of 6 in. above the top of the floor assembly.

C. GLASS PANELS – Size and install into the window openings in accordance with the exterior wall manufacturer's instructions. Use min. 1/4 in. thick, clear, heat strengthened glass (HS) or tempered glass and secure into precast concrete panel (Item 2B) openings using steel or aluminum framing.

D. LOUVER (Optional, Not Shown) – In lieu of glass panels (Item 2C), metallic louvers may be installed in the precast concrete panel (Item 2B) openings per the exterior wall manufacturer's instructions. Louvers to be mechanically secured within precast concrete panel openings.

E. PRECAST CONCRETE PANEL JOINTS – The precast concrete panels (Item 2B) may have horizontal and vertical joints between panels. Horizontal joints to be a max. 3/4 in. wide. The location of horizontal joints shall be either min. 1-1/2 in. above the top of the floor assembly or min. 6 in. below the top of the floor assembly. Vertical joints to be a max. 3/4 in. wide and may be continuous through the perimeter fire barrier joint system. Locate center of vertical joint min. 12 in. to adjacent openings (glass panel or louver) in precast concrete panels. Space the vertical joints min. 60 in. on center (oc). For all vertical joint locations where the vertical joint intersects with the perimeter joint protection (Item 3), using only Intertek certified mineral wool board, install vertical joint insulation consisting of 3 in. thick × 12 in. × 12 in., 8 pcf density, foil-faced mineral board in the interior side of the wall. The mineral wool board shall be centered over the vertical joint, flush with the top of the perimeter fire barrier, and mechanically fastened to the precast concrete wall. The exterior side of each precast concrete panel joint (both horizontal and vertical) shall be treated with polyethylene or polyurethane foam backer rod sized to accommodate the joint width. The backer rod shall be recessed to accommodate a min. 1/2 in. thickness of exterior grade silicone sealant approved by the exterior wall manufacturer. Either one or multiple layers of backer rod and exterior sealant may be used with the requirement that at least one layer be flush with the exterior side of the precast concrete panels and any inner layers are recessed a min. of 3 in. from the interior face of the precast concrete panels. On the interior side of the vertical joint, install Hilti CFS-TTS MD Firestop Top Track Seal as a backer rod to be flush with interior face of the concrete panel. The CFS-TTS MD shall be split in half from the nominal width and inserted into the vertical joint of the concrete panel. For the horizontal precast panel joint, the joint treatment depends on the location of the joint. When the horizontal joint is located 1-1/2 in. to 16 in. above the top of the floor assembly, install Hilti CFS-TTS MD Firestop Top Track Seal as a backer rod to be flush with interior face of the concrete panel. The CFS-TTS MD shall be split in half from the nominal width and inserted into the vertical joint of the concrete panel. When the horizontal joint is located a min. of 16 in. above the top of the floor assembly or a min. of 6 in. below the bottom of the floor assembly, no fill material is required on the interior side of the horizontal joint.

3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) is not to exceed 5 in. (127 mm) width (joint width at installation). Incorporate the following construction features:

- A. PACKING MATERIAL – Use only mineral wool safing bearing an Intertek Certified Label and meeting the following requirements: Within the perimeter fire barrier joint, install min. 4 in. (102 mm) thick, 4 pcf (64 kg/m³) density, mineral wool batt insulation with the fibers running parallel to the slab edge and curtain wall. Compress the packing material 25% in the nominal joint width. Compress the packing material into the perimeter joint such that the top surface of the packing material is recessed 2-1/2 in. (64 mm) below the top surface of the mass timber floor assembly (Item 1) to accommodate the depth of QuickSeal (Item 3C).
- B. PACKING MATERIAL AT MOUNTING LOCATIONS (Not Shown) – At the location of mounting attachments (Item 2B) install additional depth of mineral wool to completely encapsulate the mounting hardware. Packing material to be installed around the mounting attachments with min. 25% compression and tightly packed to fill the interstices of the mounting attachments. Packing material to be installed full depth of spandrel beam of the mass timber floor assembly (Item 1) at the mounting attachment locations.
- C. HILTI CFS-EOS EDGE-OF-SLAB QUICKSEAL – CERTIFIED PRODUCT: Hilti Corporation, perimeter fire barrier; CFS-EOS Edge-of-Slab QuickSeal. Compress the appropriately sized Edge of Slab QuickSeal product (per Table 2 above) into the perimeter joint. Remove paper from adhesive flaps and adhere to top side of mass timber floor assembly (Item 1) and interior face of precast concrete panels (Item 2A). Splices (butt joints) in the length of Edge of Slab QuickSeal are to be tightly compressed together (1/4 in. or 6 mm compression). Splices (butt joints) to be located a min. 4 in. (102 mm) from vertical joints in the precast concrete panels and min. 4 in. (102 mm) from splices in the packing material (item 3A).
- D. JOINT COVER (Not Shown) – Joint cover required only at locations of windows and shall extended min. 6 in. (152 mm) beyond window opening on each side. Joint cover is L-shaped or Z-shaped and may be either min. 0.050 in. (1.3 mm) thick aluminum with a 1 in. (25 mm) high leg or min. 18 GA steel sheet metal with a 1 in. (25 mm) high leg. Joint cover to be butted to interior surface of curtain wall and shall overlap a min. 2 in. (51 mm) onto the mass timber floor assembly (item 1) beyond the joint. The 1 in. vertical leg shall be positioned on the floor assembly to create a 1 in. space between the top of the joint cover and the CFS-EOS Edge-of-Slab QuickSeal (Item 3C). Joint cover to be fastened to the curtain wall assembly (Item 2) or the mass timber floor assembly per manufacturer's instructions.



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