

Hilti Corporation
 Design No. HI/BPF 120-39
 Perimeter Fire Barrier System
 Edge of Slab QuickSeal CFS-EOS QS
 ASTM E 2307, CAN/ULC-S115
 UL 2079 (L-Rating)
 Rating: See Table 1

Table 1. Ratings

	Edge of Slab QuickSeal, CFS-EOS QS
F-Rating	2 Hour
T-Rating	92 Minute (*See item 1)
Cycling	<2.0 SCFM/LF
Movement Cycling	None

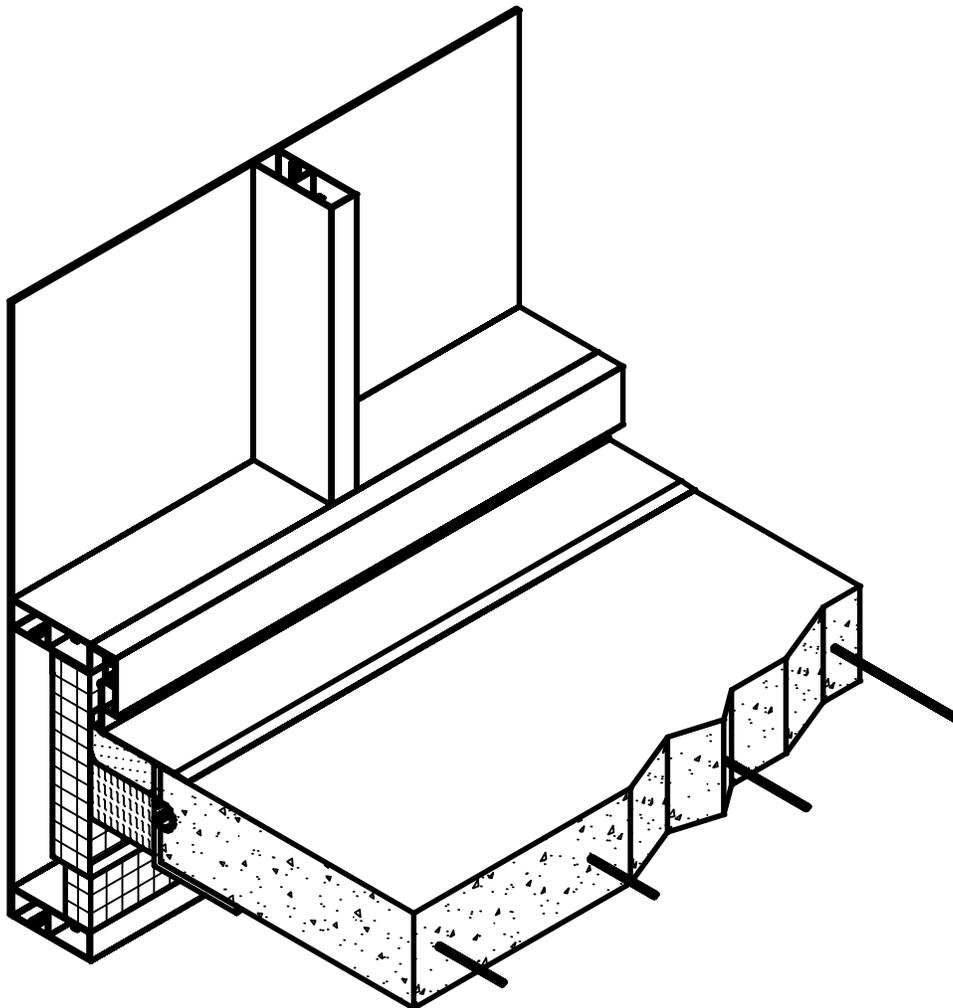


Figure 1. Standard Isometric View

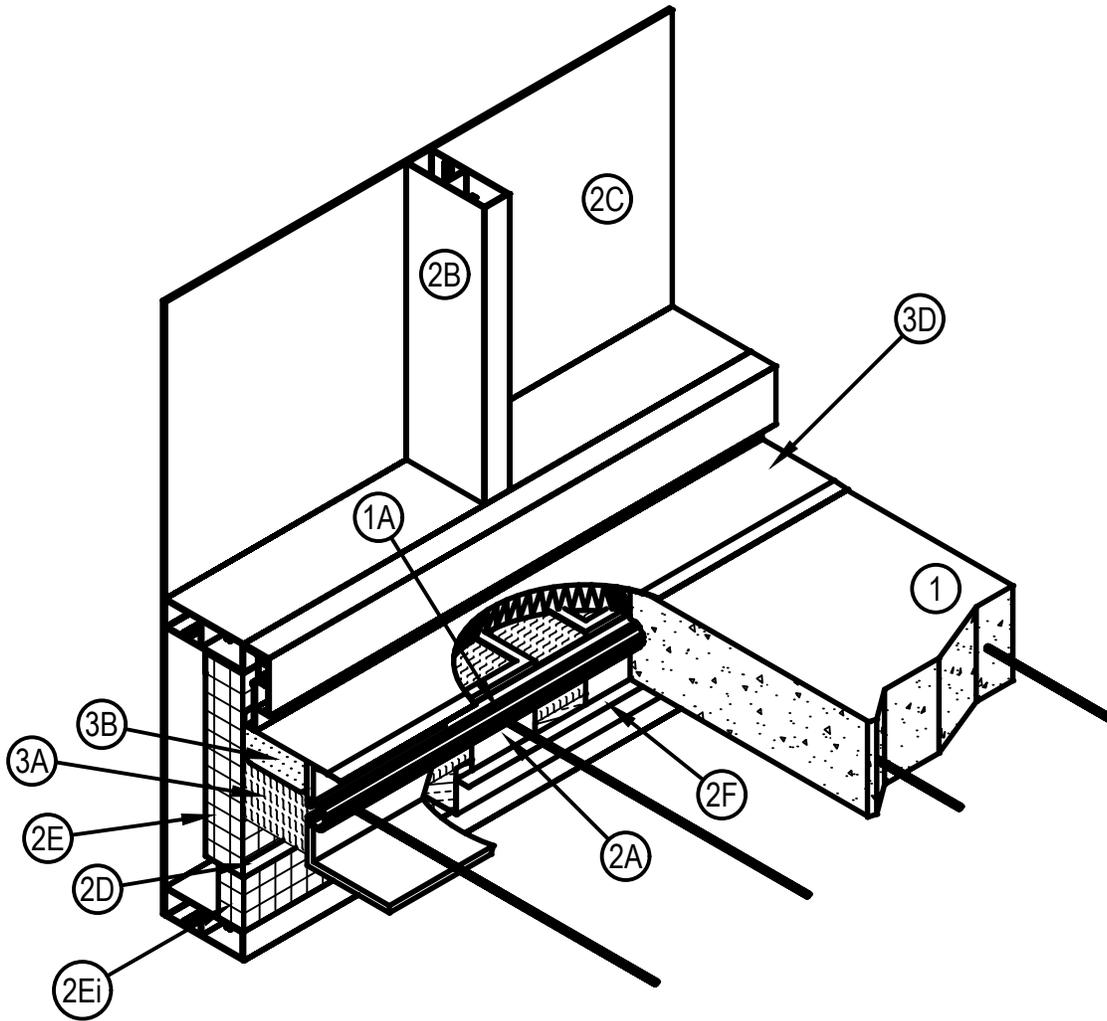


Figure 2. Breakout View

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. CONCRETE FLOOR ASSEMBLY: Minimum 2-hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100 to 150 pcf, having a min. thickness of 6-1/4 in. at the joint face. Alternatively, a min. 2-hr rated floor assembly consisting of a steel form unit with lightweight or normal weight concrete with a density of 100 to 150 pcf at the minimum thickness designated by the floor assembly rated design above the top of the steel form unit and minimum 6-1/4 in. at the joint face. A maximum 1/2-in. thick steel pour angle may be used extending from the top of the joint face to the steel form unit. *When steel pour angle thicker than 1/8-in. is used, a T-rating is not assigned to the assembly. When a longitudinal recess (blockout) is required to contain an architectural joint system, increase concrete floor assembly thickness to maintain a min. thickness of 6-1/4 in. and accommodate depth of blockout formed in the concrete: blockout width unrestricted.

A. CAST-IN INSERT - The concrete floor assembly (Item 1) shall have steel anchor channels approved by the curtain wall manufacturer, embedded in the face of the concrete floor assembly at each vertical mullion requiring a mounting attachment (Item 2A). Center the anchor channel at each vertical mullion with a mounting attachment. Position cast-in insert per the manufacturer instructions such that the in-joint mounting attachment is flush with top of the concrete floor assembly.

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

A. MOUNTING ATTACHMENT - Use min. 1/2 in. thick aluminum anchor brackets to serve as part of the mounting attachment attached to the face of the slab with anchor channel rigidly secured to the aluminum framing (Item 2B) and the concrete floor assembly (Item 1). Anchor brackets installed flush with or recessed from the top of floor. As an alternative the anchor bracket may be recessed from the underside of the floor assembly, be flush with the underside of the floor assembly, or extend below the floor assembly a maximum of 5 in. Max. distance between mounting attachments is 8 ft.

B. ALUMINUM FRAMING - Size rectangular aluminum tubing mullions and transoms according to the curtain wall system manufacturer's guidelines. Min. overall dimensions of framing required is 0.100 in. thick aluminum, with a min. 6-1/4 in. depth and a min. height of 2 in. for horizontal members located near at the floor line, 4 in. for all other horizontal members and vertical members. Mullions are spaced a min of 24 in. on center (OC) and the spandrel transoms are to be spaced a min. 29-1/2 in. OC. Spandrel transoms to be located flush with the top of the floor or above the floor a maximum of 4 in. above the top surface of the concrete floor assembly (as measured from the bottom of the transom).

As an option when glass spandrel panels (item 2C) are continuous, the horizontal member located near the floor line may consist of one or two-piece rectangular tubing "kiss" mullions and shall be min 2 in. wide by 6 in. deep and shall be formed from min 0.100 in. thick aluminum. Interior face of "kiss" mullions to be max 5 in. from edge of floor assembly. The bottom surface of the "kiss" mullion shall be spaced a maximum 4 in. from the top of the floor assembly. The interior face of the glass spandrel panel is positioned so that the interior spandrel panel surface touches the gasketing on the exterior edge of the "kiss" mullion.

C. GLASS PANELS AND SPANDREL PANELS - Size and install glass panels to curtain wall framing according to the curtain wall system manufacturer's guidelines. Use min. 1 in. total thickness glazing units, consisting of an outside and inside layer of 1/4 in. thick tempered glass and a 1/2 in. air space. Secure the panels with a thermal break (rubber extrusion) and aluminum compression plates. Alternatively, secure the glass panels with a thermal break (rubber extrusion) and structural sealant.

D. SHEET METAL PAN: Attach a fabricated 20 GA galvanized or plain steel box pan, 14 in. high and 3 in. deep composed of multi piece steel angles or a single piece and secured to the to the aluminum framing with No. 10 self-drilling sheet metal screws at 12 in. oc along the top and with two No. 10 self-drilling sheet metal screws at each vertical end at 8 in. oc. Install a bead of Hilti CFS-S SIL GG Firestop Silicone on the underside of the horizontal member prior to installation of the 3 in. x 14 in. 20 GA steel box pan. This box pan shall create a cavity that is 3 in. deep and 14 in. tall underneath the aluminum member to house the curtain wall insulation (Item 2F). The box may be fabricated by method below. Multi piece pan with the following dimension constructed with the following elements.



- i. 20 GA 1-1/2 in. x 1-1/2 in. galvanized or plain steel angle secured to the underside of the horizontal mullion with No. 10 self-tapping steel screws spaced 12 in. OC.
 - ii. 20 GA 1 in. x 5/8 in. galvanized or plain steel angle secured to the vertical mullions behind the anchor attachment with a minimum of two No. 10 self-tapping steel screws spaced 8 in. OC.
 - iii. 20 GA 1-1/2 in. x 1-1/2 in. galvanized or plain steel angle secured to vertical mullion under the anchor attachment with a minimum of two No. 10 self-tapping steel screws.
 - iv. 20 GA 14 in. x 3 in. galvanized or plain steel angle with 1 in. vertical return leg secured to the steel angles fastened to the aluminum framing with No. 10 self-tapping steel screws spaced 12 in. OC.
- E. CURTAIN WALL INSULATION: Use only mineral wool batt insulation that is bearing an Intertek Certified Label and meets the following minimum requirements. Use a min. of 3 in. thick 8 pcf density mineral wool batt insulation faced on one side with aluminum foil scrim which is exposed to the room interior. Curtain wall insulation to be compressed min. 1/8 in. in all directions to allow a friction fit in the steel pan within the spandrel. Seams in insulation, along with the interface between the insulation and framing is sealed with min. 3 in. wide aluminum tape.
- i. Additionally, install Intertek certified, min. 2 in. thick, 8 pcf mineral wool insulation shall be friction-fit to fill the area below the sheet metal pan (Item 2D). Tape all adjacent edges between the curtain wall insulation, between aluminum framing (Item 2B) and curtain wall insulation, with pressure sensitive aluminum foil tape, centered over seams.
- F. MOUNTING ATTACHMENT COVER - Four-sided enclosure constructed with 2 in. thick 8 pcf curtain wall insulation to completely encapsulate bracket on all exposed sides. Enclosure sized 4 in. wider than the mounting attachment, including associated hardware and centered about the bracket location. Cover formed from min. 20 GA sheet steel to encapsulate the insulation. Cover formed with a 1 in. lip attached to the underside of the concrete floor assembly (Item 1) with concrete screw anchors, and L shaped pan with a 3/4 in. lip that attached to the face of the sheet metal pan (Item 2D) within the spandrel with 3/4 in. long No. 10 sheet metal screws.

3. PERIMETER JOINT PROTECTION: Do not exceed a 5 in. nominal joint width (joint width at installation). Incorporate the following construction features for the perimeter joint protection (also known as perimeter fire barrier system):

- A. PACKING MATERIAL - Use only mineral wool batt insulation that is bearing an Intertek Certified Label and meets the following minimum requirements. Install min. 4 in. thick, 4 pcf density, mineral wool batt insulation with the fibers running parallel to the slab edge and curtain wall. Recess the packing material 2-1/2 in. below the top of the concrete floor assembly (Item 1) and 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 batt insulation is 2-1/2 in. below top of concrete floor assembly.
 - i. At each vertical mullion with an in-joint mounting attachment, pack the mineral wool full depth of concrete floor assembly (Item 1) and within all interstices of the mounting attachment (Item 2A) assembly tightly to the max. extent possible to fill the voids within the mounting attachment assembly, such that the mineral wool is recessed to accommodate the Edge of Slab QuickSeal CFS-EOS QS (Item 3B) and be flush with the bottom of the mounting attachment. Sections of CFS-EOS QS that span the support bracket to be notched in such a way that there is a minimum 1/4 in. of compression to all surfaces of this item.

B. CERTIFIED MANUFACTURER: Hilti Corporation

CERTIFIED PRODUCT: Edge of Slab QuickSeal CFS-EOS QS

FILL, VOID, OR CAVITY MATERIAL - Apply over packing material (Item 3A) as follows:

Compress the appropriately sized Edge of Slab QuickSeal product into the perimeter joint (per Table 2). Remove paper from adhesive and adhere flaps to top side of concrete floor assembly (Item 1) and interior face of curtain wall assembly (Item 2). Splices (butt joints) in the length of Edge of Slab QuickSeal are to be tightly compressed together (minimum 1/4 in. compression).



C. **CERTIFIED MANUFACTURER:** Hilti Corporation

CERTIFIED PRODUCT: EDGE OF SLAB WATERSTOP CFS-EOS WS

(Optional, Not Shown) Use only Hilti Corporation CFS-EOS WS bearing an Intertek Certified Label. Apply 2 mm wet thickness over any seams and overlap a min 1 in. onto Edge of Slab QuickSeal (Item 3B), the adjacent curtain wall assembly (Item 2) and concrete floor slab assembly (Item 1).

D. ALUMINUM ARCHITECTURAL COVER - Use aluminum extruded cover with min. overall dimensions of 0.100 in. thick and sized to accommodate a 1 in. overlap onto concrete floor assembly (item 1). Joint cover to be continuously connected to transom via integrated keying function or mechanical attachment per curtain wall manufacturer's instructions.



Hilti Firestop Systems

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