Design No. HI/BP 120-05

PERIMETER FIRE BARRIER SYSTEM

Hilti, Inc.

ASTM E 2307

Table 1

	FIRESTOP JOINT SPRAY CFS-SP WB	SILICONE JOINT SPRAY CFS-SP SIL
F-RATING	2-HR.	2-HR.
T-RATING	1-HR.	1-HR.
APPLICATION THICKNESS	1/8" WET FILM (1/16" DRY)	2mm (0.079") WET FILM

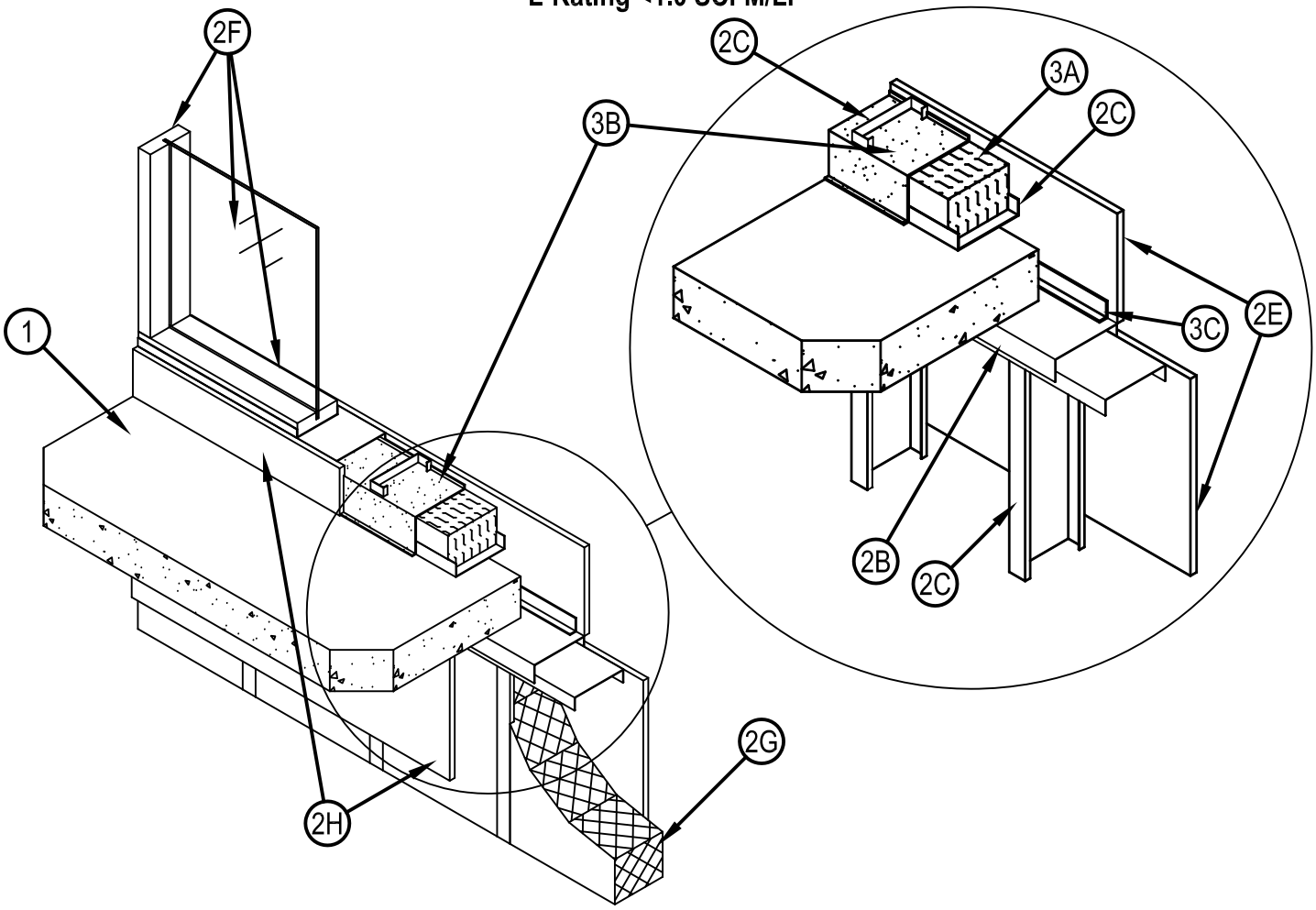
Rated for ± 0 % horizontal movement

Rated for - 100% downward vertical shear movement (3/4 in.) Class II 500 Cycles

Rated for + 0% upward vertical shear movement

UL 2079

L-Rating <1.0 SCFM/LF



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1. CONCRETE FLOOR ASSEMBLY: Min. two-hour rated concrete floor assembly (Item 1) made from either lightweight or normal weight concrete with a density of 100-150 pcf, with a min. thickness of 4 to 4-1/2 in., respectively, at the slab edge (joint face). Optional – Provided the two-hour concrete floor assembly (Item 1) rating is not compromised, the overall slab thickness may vary to accommodate various blockout depths (longitudinal recesses) formed in the concrete, to house an optional architectural joint system. The blockout width may also vary without restriction.
2. CURTAIN WALL ASSEMBLY: The curtain wall assembly shall incorporate the following construction features:
   A. Mounting Attachment: (Not shown) Attach the steel-stud framing to the structural framing according to the curtain wall manufacturer's instructions. When required, connect the mounting attachments to the concrete floor assembly (Item 1) at the slab edge (joint face), according to the curtain wall manufacturer's instructions. Use a max. 10 ft. distance between mounting attachments.
   B. Slip-Track (Deflection Channel): As part of the Curtain Wall Assembly (Item 2) attach a min. 16 GA channel, sized to accommodate Steel-Stud Framing (Item 2C), to the bottom of the Concrete Floor Assembly (Item 1) using 1/4 in. diameter x 2 in. long concrete screws spaced nominally 12 in. on center. Cantilever the Slip-Track (Deflection Channel) (Item 2B) nominally 1 in. to 2 in. past the vertical face of the Concrete Floor Assembly (Item 1). The Slip-Track (Items 2B) and floor track of the Steel-Stud Framing (Item 2C) create a min. 4 in. deep by 1 in. to 2 in. wide reveal. Attach Reinforcing Angle (item 3C) to top of Slip-Track (Deflection Channel) (Item 2B). Create an exterior max. 3/4 in. horizontal joint at the Slip-Track (Deflection Channel) (Item 2B) after the Sandwiched Wall Surface (Item 2E) is installed. Form the joint using two juxtaposed edges of the Sandwiched Wall Surface (Item 2E) as the sides and create the back of the joint using the exposed steel face of Slip-Track (Deflection Channel) (Item 2C). Locate the 3/4 in. horizontal joint directly below and parallel to the Perimeter Joint Protection (Item 3).
   C. Steel-Stud Framing: Use min. 6 in. by 1-5/8 in., 16 GA steel "C" studs cut to length as vertical framing members spaced a max. of 16 in. on center, secure the ends of the steel studs in compatible sized 20 GA steel tracks, using min. #6 x -1/2 in. pan or hex head screws. Cantilever the floor track nominally 1 in. to 2 in. past the vertical face of the Concrete Floor Assembly (Item 1). Secure the floor track to the top of the Concrete Floor Assembly (Item 1) with 1/4 in. diameter x 2 in. long concrete screws (or either powder actuated fasteners or steel expansion bolts having equivalent strength and performance) spaced a max. of 24 in. on center. Insert the ceiling track inside the “Slip-Track (Deflection Channel)” (Item 2B) to create a 3/4 in. gap between channels to allow for downward movement.
   D. Optional Joint System (Not Shown): Use only sealants certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled sealant meeting the following requirements: Install a nominal 1/2 in. polyethylene backer rod into the 3/4 in. horizontal joint in contact with the steel face of Slip-Track (Deflection Channel) (Item 2B). Cover the nominal 1/2 in. polyethylene backer rod using a silicone, endothermic, or intumescent sealant.
   E. Sandwiched Wall Surface: Install Reinforcing Angle (Item 3C), then apply and secure a min. 5/8 in. thick, 48 in. wide by 96 in. long, exterior grade fiberglass sheathed gypsum board to Steel-Stud Framing (Item 2C) with min. 1-1/4 in. long Type S drywall screws 12 in. on center in field and 8 in. on center at perimeter created by the Slip-Track (Deflection Track) (Items 2B) and the floor track of the Steel-Stud Framing (Item 2C). Do not attach exterior grade fiberglass sheathed gypsum board to Slip-Track (Deflection Channel) (Item 2B). Alternate Cementitious Backer Units: Use min. 5/8 in. thick cement based boards attached to Steel-Stud Framing (Item 2C) with min. 1-1/4 in. long Type S drywall screws 12 in. on center in field and 8 in. on center at perimeter created by the Slip-Track (Deflection Track) (Items 2B) and the floor track of the Steel-Stud Framing (Item 2C). Do not attach 5/8 in. thick cement based boards to Slip-Track (Deflection Track) (Item 2C). Butt all edges of all 5/8 in. thick cement based boards tightly together and cover joints with glass fiber mesh tape covered with compatible cementitious coating.
   F. Optional Vision Glass Panels: Size and install glass panels into curtain wall framing according to the curtain wall system manufacturer's guidelines. Use a min. 1/4 in. thick, clear, heat-strengthened (HS) glass or tempered glass sized for the window framing, which allows the vision glass panels to be secured between the notched shoulder of the framing and pressure bar. When required by the manufacturer, secure vision glass panels with a thermal break (rubber extrusion), pressure bar (aluminum extrusion), min. 1/4-20 x 5/8 in. long screws, and a snap face (aluminum extrusion). Optional Window Framing: Framing material shall be non-combustible. Locate window framing at least 4-1/2 in. above the top surface of the floor assembly.

G. Curtain Wall Insulation: Use only mineral wool or glass fiber batt insulation certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled mineral wool or glass fiber batt insulation meeting the following requirements: Any mineral wool or glass fiber batt insulation. Install curtain wall insulation within the cavity of the Steel-Stud Framing (Item 2C) a min. of 24 in. below the Slip-Track (Deflection Channel) (Item 2B). Secure the insulation in accordance with the manufacturer's installation instructions. Mineral wool or glass fiber batt insulations are acceptable.

H. Interior Curtain Wall Surface: Install Type X Gypsum board to the interior curtain wall surface above and below the Concrete Floor Assembly (Item 1) wherever Steel Stud Framing (Item 2B), Slip-Track (Deflection Channel) (Item 2C) or Curtain Wall Insulation (Item 2H) is exposed. Secure the interior curtain wall surface in accordance with the manufacturer's installation instructions.

I. Exterior Curtain Wall Finish: (Not shown) The exterior finish shall not create voids or openings in the sandwiched wall surface and shall extend at least 4 in. above and at least 24 in. below the surface of the Concrete Floor Assembly (Item 1). The following finishes are acceptable:

(1) Exterior Insulation Finish System: Use only EIFS composed of an expanded polystyrene (EPS) foam insulation, and an Exterior Curtain Wall Finish certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled EIFS meeting the following requirements: A plaster, base coat and reinforcing mesh applied over the sandwiched wall surface. Precut the mesh as needed. The mesh is a woven fiberglass reinforcement fabric that is compatible with the plaster base coat and finish coat materials. Apply 1/16 to 1/8 in. thick plaster base coat to the exposed surface of the EPS foam. The EPS foam boards nominally measure 24 in. wide by 48 in. long by a max. of 4 in. thick with a nominal density of 1 pcf. The EPS foam is attached to the Sandwiched Wall Surface (Item 2E) using mechanical fasteners or an adhesive in accordance with manufacturer's recommendations. Install the EPS boards in a running bond (brick-like) pattern and staggered over Sandwiched Wall Surface (Item 2E) joints. Apply pressure to the EPS boards to assist in the bonding process. All EPS boards must be butted together with no gaps or voids between them. Allow a min. of 12 hours before continuing the application process when using adhesive. The EPS boards must be rasped to remove all irregular seams and establish a continuous flat surface. Apply the mesh over the EPS; embed the mesh into the plaster base coat using a trowel. Start at the middle and work outwards towards edges. The final thickness of the plaster base coat with the mesh embedded should be approximately 1/16 in.. Let the base coat dry completely before applying the plaster finish coat. The plaster finish coat is a gypsum based wall coating which may contain silica sand or marble aggregates. Apply the plaster finish coat using a trowel in the same manner as the plaster base coat. Other installation techniques are acceptable when detailed by the manufacturer. The EIFS system is a monolithic assembly without expansion or control joints.

(2) Glass Panels: Size and install glass panels into curtain wall framing according to the curtain wall system manufacturer's guidelines. Use a min. 1/4 in. thick, clear, heat-strengthened (HS) glass or tempered glass with a max. width and height less than the framing on center spacing, which allows the glass to be secured between the notched shoulder of the framing and pressure bar. Panels are secured with a thermal break (rubber extrusion), pressure bar (extrusion), min. 1/4-20 x 5/8 in. long screws, and a snap face (extrusion) or other manner as detailed by the manufacturer. The system is a monolithic assembly without expansion or control joints.

(3) Aluminum Panels: Min. 1/8 in. thick aluminum panels secured to the steel-stud framing (Item 2B) in accordance with the manufacturer's installation instructions. When framing for the aluminum panels is required, it is to be installed with the manufacturer's installation instructions. The system is a monolithic assembly without expansion or control joints.

(4) Brick: Use any conventional brick and mortar type. Any brick pattern is acceptable. Mortar joints are not to exceed 7/8 in. Secure bricks to wall assembly using conventional acceptable masonry construction techniques. The system is a monolithic assembly without expansion or control joints.

(5) Stucco: Use only stucco systems certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled stucco system meeting the following requirements: Any stucco system is acceptable provided that the following is abided by: When EPS is used, the EPS foam boards nominally measure a max. of 4 in. thick with a nominal density of 1 pcf. The stucco manufacturer confirms the stucco is compatible with the sandwiched wall surface. The system is a monolithic assembly without expansion or control joints.

(6) Stone: Use any conventional stone panel and mortar type measuring at least 1 in. thick. Any stone pattern is acceptable. Mortar joints are not to exceed 7/8 in.. Secure stones to wall assembly using conventional acceptable masonry construction techniques. The system is a monolithic assembly without expansion or control joints.

(7) Siding: Use only siding certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled siding meeting the following requirements: Any siding system is acceptable provided that the following is abided by: The siding shall be classified as non-combustible. The system is a monolithic assembly without expansion or control joints.

(8) GFRC Panels: Glass fiber reinforced concrete panels shall be at least 1 in. thick and attached in accordance with the manufacturer's installation instructions. The system is a monolithic assembly without expansion or control joints.

(9) Use only roofing materials certified by Intertek, bearing an Intertek label or an equivalent Listed and Labeled roofing material meeting the following requirements: Class A bituminous roofing material applied in accordance with manufacturer's installation instructions.

3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) shall not exceed a 2 in. nominal joint width (joint width at installation) between the interior face of the sandwiched wall surface and the vertical face of the concrete floor assembly. The perimeter joint treatment shall incorporate the following construction features:

A. Packing Material: Use only Mineral Wool certified by Intertek, bearing an Intertek label meeting the following requirements: A min. 4 in. thick, 4 pcf density, mineral wool batt insulation. Install min. 6-1/4 in. wide strips of the Packing Material into the web of the floor track and web of the steel studs of the Steel-Stud Framing (Item 2C).

B. CERTIFIED MANUFACTURER: Hilti, Inc.
CERTIFIED PRODUCT: Joint Spray or Sealant
MODEL: Firestop Joint Spray CFS-SP WB or Silicone Joint Spray CFS-SP SIL
Fill, Void or Cavity Material: Spray or brush apply to completely cover the Packing Material (Item 3A), extending coverage at the thickness specified in Table 1 and overlap the material a min. 1/2 in. onto the adjacent concrete floor slab assembly and Steel-Stud Framing (Item 2C) and Sandwiched Wall Surface (Item 2E). When application is stopped and the applied liquid cures to an elastomeric film before application process is restarted, overlap the edge of the cured material at least 1/8 in. with fresh material.

C. Reinforcing Angle: Mount a min. 20 GA, 1-1/2 in. x 3/4 in. galvanized steel angle continuously to the top of the Slip-Track (Deflection Channel) (Item 2B) using min. # 6 x 1/2" framing screws with pan or hex head nominally 24 in. on center. Screws heads located on bottom of slip-track Position the reinforcing angle so that the 3/4 in. horizontal leg attaches the exposed top of the cantilevered Slip-Track (Deflection Channel) (Item 2B) and the 1-1/2 in. vertical leg is plumb with outside cantilevered edge of the floor track of the Steel-Stud Framing (Item 2C).