Design No. CEJ 372 P – 3M

PERIMETER FIRE BARRIER SYSTEM – ASTM E 2307

T Rating - 0 hr.

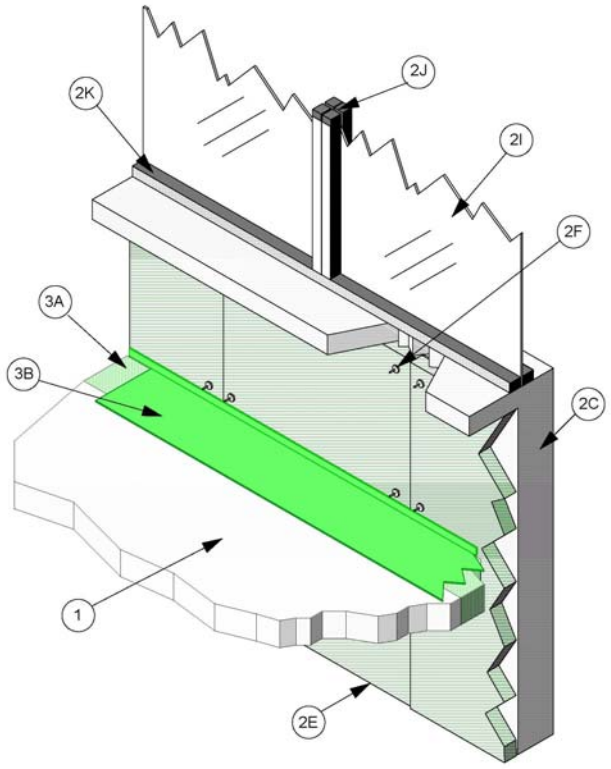
F-Rating - 2 hr

L-Rating <1 SCFM/LF – UL 2079

Cycling – Class 4– ASTM E 1399/ASTM E 2307

Rated for ± 10% horizontal movement @ 33% Compression (Reference Item 3A)

Rated for ± 6.25% vertical shear movement @ 33% Compression (Reference Item 3A)



1. CONCRETE FLOOR ASSEMBLY: Two-hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100-150 pcf, with a min. thickness of 4-1/2-in. at the joint face. Overall slab thickness may vary to accommodate various blockout depths (longitudinal recesses) formed in the concrete, to house the architectural cover plate. The blockout width may also vary without restriction.

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

   A. Mounting Attachments: (Not shown) Attachment of the curtain wall framing to the structural framing shall be according to the curtain wall manufacturer's instructions. When required, the mounting attachments to the floor slab shall be connected to the joint face of the floor slab, according to

the curtain wall manufacturer's instructions. Maximum distance horizontally between mounting attachments shall be 10 feet.

B. Pre-Cast Concrete Panels: When tilt-up or formed panels are used the shall be engineered structural panels made from steel-reinforced lightweight or normal weight (100-150 pcf) concrete, a minimum of 4-inches thick, 48-inches high. Panels shall be equipped with structural mechanical attachments welded to the steel reinforcement within the panel for mechanical attachment to steel columns and spandrel beams in accordance with structural engineer's requirements. When anchors are located within the Perimeter Joint Protection (3), a minimum recess of 1/2 -inch from the top of the Concrete Floor Assembly (1) and maximum spacing of 120 inches on center between anchors shall be maintained.

C. Concrete Panel Joint***: Vertical and horizontal concrete panel-butt joints maximum 1-inch wide. When the concrete panel joint is butted with no space, the concrete panel joint can be either Flush type (butt joint) or key way type (tongue and groove) and does not require any further joint treatment unless required for weatherproofing purposes. When joint space exists between panels, the void must be treated with min. 4 in. thick, 4pcf, 3 in. thick 6 pcf or 2 in. thick 8 pcf curtain wall insulation (2D) applied to the interior surface of the wall.

Listed Manufacturer:

Only Intertek Certified Mineral Wool Manufacturer's product meeting the above minimum requirements

The seams between adjacent sections of curtain wall insulation must be offset a min. of 3 in. from the edge of any joint in the panel wall. The wall joint can then be treated with any weatherproofing material Listed as a Class 1 material in accordance with ASTM E-84

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D. Impaling Pins: Minimum 12 GA steel impaling pins shall be spaced 24 in. on center in all directions on the interior face of the Pre-Cast Concrete Panels (2C). Additional pins shall be spaced a maximum of 16 in. on center at the centerline of the Perimeter Joint Protection packing material (3A). Each pin shall be equipped with a minimum 1-1/2 in. diameter locking washer. A minimum of two impaling pins required located above the floor line per piece of insulation that has been cut from standard size with at least one in each corner.

E. Clutch Clips: (Installed over Impaling Pins) Minimum 18 GA steel clutch clips, maximum 1 ¼ in., Clutch clips and impaling pins shall be spaced a maximum of 16 in. on center at the centerline of the perimeter joint protection packing material (3A). Each impaling pin must have a clutch clip installed. The clutch clips create an air space between the Pre-Cast Concrete Panels (2B) and the Curtain Wall Insulation (2F)

F. Curtain Wall Insulation: Concrete Panel Joint treatment (2C) shall be installed before curtain wall insulation. Install either nom. 4 in. thick 4pcf, 3 in. thick 6 pcf or 2 in. thick 8 pcf density mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior. Secure with impaling pins (2F). All meeting edges of insulation are sealed with nom. 2-in. wide pressure sensitive aluminum foil faced tape. Curtain wall insulation shall terminate at the concrete panel return above the Perimeter Joint Protection (3).

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The following vision glass panel detail is included as an optional installation detail outside the spandrel area:

G. Glass Vision Panels: Glass vision panels shall be a min. 20 in. above the top surface of the floor assembly. Glass vision panels shall be installed to curtain wall framing according to the curtain wall system manufacturer's guidelines. Use a min. 1/4 in. thick, clear tempered glass with a nom. width and height as determined by the framing.

H. Window Gaskets: Secure glass vision panels with a thermal break (thermal-set rubber extrusion).

I. Window Framing: Steel or aluminum framing members shall be a min. 3-5/8-in. by 1-5/8-in. 18 GA steel "U" channel or similar construction that is compatible with the curtain wall construction (2b, 2c). Locate window framing at least 20 in. above the top surface of the floor assembly.

3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) shall not exceed 8 in. (joint width measured between deck edge and interior face of curtain wall) and the perimeter joint treatment shall incorporate the following construction features:

A. Packing Material: Install minimum 4" thick, 4 pcf mineral wool batt insulation with the fibers parallel to the slab edge and the curtain wall. The packing material shall be compressed 33% for 10% horizontal movement and 6.25% vertical shear in the nominal joint width. Splices (butt joints) in the lengths of mineral wool batt insulation are to be tightly compressed together. When using the Fire Barrier 1000 or 1003 Sealants, recess the mineral wool packing material a minimum ¼ in. from the top surface of the floor slab to accommodate the required installation depth of the sealant. Reference the Introduction to Fire Resistive Joint section of this directory for more details on how to determine the cut width of the insulation to be installed in the joint width and how to determine the compressed percentage of a known insulation width installed in a known nominal joint.

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B. Fill, Void or Cavity Material: FireDam™ Spray 200 is to be applied (sprayed, brushed, or troweled) to cover the top exposed surface of the mineral wool installed in the perimeter joint. Apply a min. wet film thickness of 1/8 in. and overlap the FireDam™ Spray 200 a min. 1/2 in. onto the adjacent wall curtain wall assembly and the concrete floor assembly. If spraying process is stopped and the applied material cures to an elastomeric film before the process is restarted, then overlap the edge of the cured material at least 1/8 in. with the spray. When using the Fire Barrier 1000 or 1003 Sealants, apply a minimum ¼ in. thick layer of the sealant. Reference Product Section of this Directory for more details about the Listed product.

Listed Manufacturer:

3M --

Joint Sealant

FireDam™ Spray 200

Fire Barrier 1000 NS Sealant

Fire Barrier 1003 SL Sealant

Before testing, the spliced, test specimen was cycled 500 times at 30 cpm according to ASTM E 1399 and ICBO ES AC 30 (Jan. 1997).

***The joint application as detailed in Item 2 is considered part of the wall system.