
Design No. CEJ 311 P

PERIMETER FIRE BARRIER SYSTEM

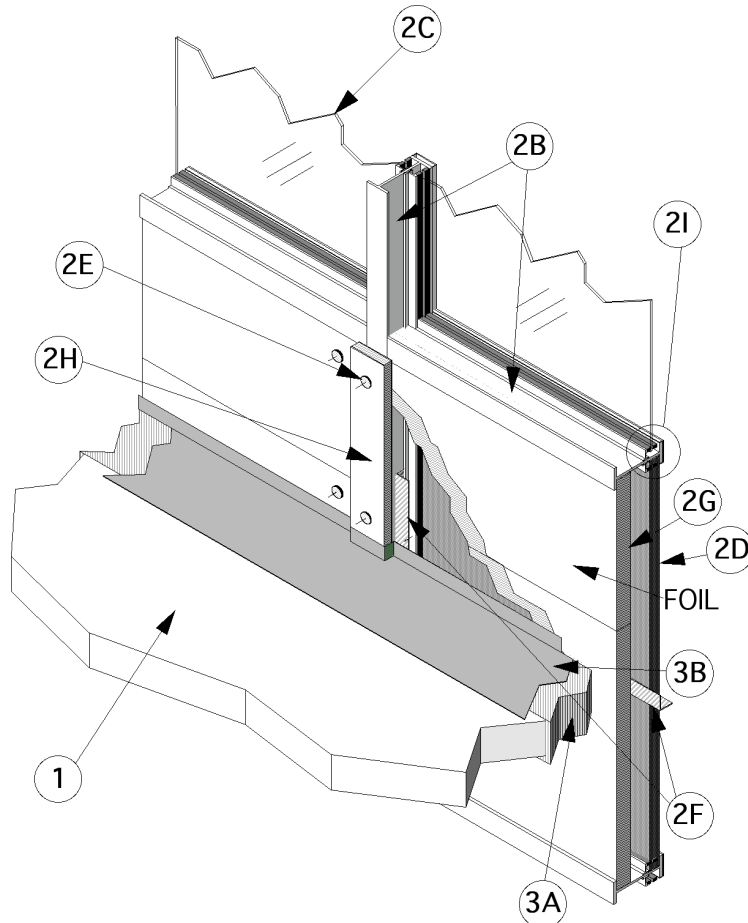
T-Rating – 2-1/2 hr.

F-Rating - 3 hr.

L-Rating <1 SCFM

Rated for ± 16.7% horizontal movement

Rated for ± 6.25% vertical shear movement



1. **CONCRETE FLOOR ASSEMBLY:** Max. three-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 Attachment:** (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.

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Max. distance between mounting attachments shall be 10 feet.

- B. Aluminum Framing: Aluminum Framing: Install I shaped mullions and transoms, sized according to the curtain wall system manufacturer's guidelines. Min. overall dimensions of mullion framing is 0.125 in. thick with a min. 5-1/2 in. height and a min. of 2-1/2 in. width of the extrusion. Min. overall dimensions of transom framing is 0.125 in. thick with a min. 2 in. height and a min. of 2 in. width of the extrusion. Mullions are to be spaced a min. 60 in. o.c. and transoms are to be spaced a min. 48 in. o.c. Transoms are to be located at a height of 20 in. above the top surface of the concrete floor assembly (as measured from the bottom of the transom).
- C. Vision Glass Panels: Glass panels shall be sized and installed to 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 aluminum framing o.c. spacing, which allows the glass to be secured between the notched shoulder of the aluminum framing and pressure bar. Panels are secured in accordance with 2I.
- D. Spandrel Panels: Nominal 1-3/16 in. thick polished granite panels having nominal 1 in. thick edges. Panels are to be sized in accordance with the perimeter boundary requirements for the spandrel framing, as described in 2B. Install the panels with aluminum pressure plates, glazing gaskets and steel screws in accordance with the curtain wall manufacturer's instructions.
- E. Impaling Pins: Min. 12 GA steel pins shall be located, sized and installed according to the curtain wall system manufacturer's guidelines, or be a min. 1/2 in. longer than the thickness of the curtain wall insulation. Attach pins to a nom. 2 in. by 2 in. clip angle constructed with 20 GA galvanized sheet steel and secure the clips to the aluminum framing with No. 10 self-tapping sheet metal screws. Pins shall be spaced a max. of 12 in. o.c on the vertical framing members and a max. of 20 in. o.c on the horizontal framing members that make up the perimeter of the spandrel area. The interior face of the curtain wall insulation is to be installed so that it is flush with the interior face of the framing.
- F. Reinforcing Angle: Mount a min. 1-1/2 in. x 1-1/2 in. x 20GA galvanized steel angle to the vertical framing members so that the vertical leg serves as a backer to the exterior face of the curtain wall insulation and the horizontal leg extends away from the curtain wall insulation and the elevation is located at the centerline of the perimeter joint treatment. Size the angle 12 in. longer than the span between the interior edges of the vertical framing members and form the angle so that it has a 6 in. vertical leg on each end. Secure the 6 in. leg to the framing member on each side with three No. 10 steel self-tapping sheet metal screws placed in a triangular fashion with a max. spacing of 2 in. o.c.
- G. Curtain Wall Insulation: Install nom. 2 in. thick 8pcf density mineral wool batt insulation** faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior. Secure with angle clips and impaling pins (2E). All meeting edges of insulation are sealed with nom. 4-in. wide pressure sensitive aluminum foil faced tape centered over the junction so that approx. 2 in. of tape covers each edge of the adjacent insulation. In lieu of the 2 in. 8pcf mineral wool curtain wall insulation, 4 in. 4pcf mineral wool may be installed using the same securing method described in Item 2E. The interior face of the batts is, if required compressed, flush with the interior face of the curtain wall framing. A min. 1-1/4-in. air space is created between the insulation and panel. The batts shall be installed without vertical seams, with a continuous span across the full length between the vertical curtain wall framing members. Horizontal seams in the insulation are to be at least 6 in. from the top surface of the perimeter joint treatment. (** Listed with Omega Point Laboratories)
- H. Framing Covers: Framing covers, comprised of 4 in. wide strips of 8pcf density mineral wool batt insulation** faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior, are centered over each vertical framing member and secured to the member with impaling pins and clips spaced a max 12 in. o.c. and

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attached in accord with 2E. Framing covers below the perimeter joint treatment are min. 2 in. thick, and those above the perimeter joint treatment are min. 1 in. thick. Framing covers do not pass through the perimeter joint treatment. They are butted to the top and bottom surfaces of the perimeter joint treatment. (** Listed with Omega Point Laboratories)

- I. Secure panels with a thermal break (thermal-set rubber extrusion), pressure bar (aluminum extrusion), 1/4-20 x 5/8 in. long screws, and a snap face (aluminum extrusion). The spandrel panels shall be insulated according to 2G.
3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) shall not exceed an 8 in. nom. joint width (joint width at installation) and the perimeter joint treatment shall incorporate the following construction features:
 - A. Packing Material: Use a min. 4 in. thick, 4 pcf density, mineral wool batt insulation** installed with the fibers running parallel to the slab edge and curtain wall. The packing material shall be compressed 20% in the nominal joint width. Compress the batt insulation into the perimeter joint such that the top surface of the batt insulation is flush with the top surface of the concrete floor slab and its mid depth is compressed against the interior surface of the curtain wall insulation (2G) which is supported by the 20 GA steel reinforcing angle (2F). Splices (butt joints) in the lengths of mineral wool

batt insulation are to be tightly compressed together. Reference the Introduction to Fire Resistive Joint Systems Section of this Directory for more details on how to determine the cut width of the insulation to be installed in the nominal joint width, and how to determine the compressed percentage of a known insulation width installed in a known nominal joint width. (** Listed with Omega Point Laboratories)

- B. Fill, Void or Cavity Material: Liquid is to be spray applied to cover the exposed surface of the mineral wool installed in the perimeter joint. Apply a min. wet film thickness of 1/8 in. and overlap the material a min. 1/2 in. onto the adjacent curtain wall assembly and concrete floor slab assembly. If the spraying process is stopped and the applied liquid cures to an elastomeric film before process is restarted, then overlap the edge of the cured material at least 1/8 in. with the spray. Reference Product Section of this Directory for more details about the Listed product.

Listed Manufacturer:

3M

Joint Sealant

Spray

FireDam™ Spray 100

- ** 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).