
Design No. CEJ 126 P

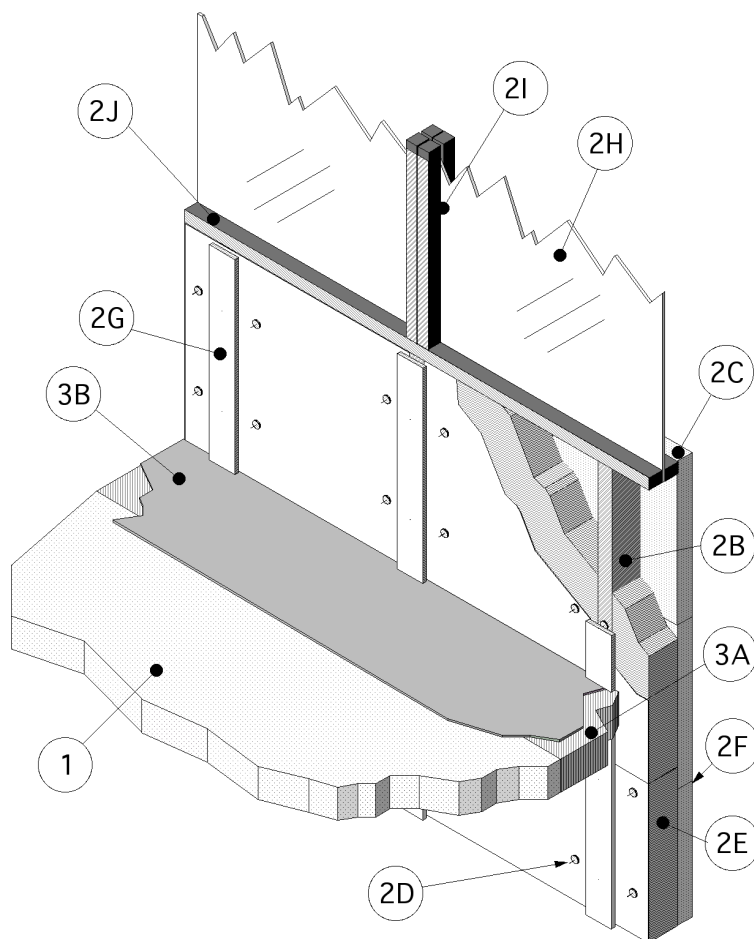
PERIMETER FIRE BARRIER SYSTEM

T Rating - 1/4 hr.

F-Rating - 2 hr

L-Rating <1 SCFM/LF

Rated for $\pm 16.7\%$ movement



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 concrete 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. Aluminum Framing: Rectangular aluminum tubing mullions and transoms, sized according to the curtain wall system manufacturer's guidelines. Minimum required framing dimensions are 0.100 in. thick walls with min. 6-1/2" depth and min. 2-1/2" width. Mullions are to be spaced minimum 56-1/2" o.c. and transoms are to be spaced minimum 69 in. o.c. Transoms are to be located at a height of 33 in. Above the top surface of the concrete floor assembly (as measured from the bottom of the transom).
- C. Concrete Panels: Any non-combustible exterior concrete based panel. Panels shall not be less than 2-1/2 in. thick, 12 in. high or 12 in. long. Attachment to the framing shall be according to the curtain wall system manufacturer's guidelines.
- D. Impaling Pins: When used with insulation and framing covers, the steel or aluminum pins shall be located, sized and installed according to the curtain wall systems manufacturer's guidelines, or be 12 gauge pins sized to extend minimum 1/2" through the insulation batt. Pins are attached to a 2 in. x 2 in. plate, a nom. 2 by 2 by 2 in. long angle, or directly attached to the framing using a stud gun. Pins shall be spaced a max. of 12 in. o.c. and installed around the periphery (min.) so that the interior face of the curtain wall insulation is flush with the interior face of the framing.
- E. Curtain Wall Insulation: Nom. 4" thick, 4 pcf or nom. 2" thick, 8 pcf foil scrim faced (vapor retard) mineral wool batt** installed in the framing cavities in the spandrel area. Batts installed foil side to the interior, flush with the framing. A min. 1-1/4" air gap must be maintained between the outer surface of the insulation batt and the spandrel panel. Batts are fitted tightly between vertical framing members with clips, impaling pins, or friction fit using a batt insulation length at least 1/4 in. longer than the distance between vertical framing members. If 2 in. 8 pcf mineral wool is used, it may not be secured by friction fit. Additionally, a nom. 1-1/2 in. x 1-1/2 in. 20GA steel angle (not shown) is to be installed horizontally at mid-depth of the packing material (3A) and it must be mechanically attached to each vertical framing member with min. #6, 1/2 in. long self-tapping sheet metal screws. All adjacent edges between insulation batts, or between framing members and insulation batts, must be taped with min. 4 in. wide pressure sensitive aluminum foil tape, centered on the seam. Horizontal seams in the curtain wall insulation are to be at least 6 in. above or below the top surface of the perimeter joint treatment. (** Listed with Omega Point Laboratories)
- F. Concrete Panel Joint: Vertical and horizontal concrete panel joints created between panels can be either flush type (butt joint) or key way type (tongue and groove). Concrete panel edges must be in contact with each other. If required, the surface of the panel joints can be sealed with gaskets or sealants.
- G. Framing Covers: Strips made of 1 in. thick 8 pcf, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior. Strips must be cut to a width to overlap vertical framing members by a minimum of 3/4 in. on each side. Framing covers are centered over each vertical framing member and secured to the member with impaling pins and clips spaced at least 12" o.c. The pins are to be attached as described in the impaling pin detail (2D). Framing covers are butted to the top and bottom surfaces of the perimeter joint treatment and do not pass through the perimeter joint treatment.

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

- H. Glass Vision Panels: Glass vision panels shall be a min. 33 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.
 - I. Window Gaskets: Secure glass vision panels with a thermal break (thermal-set rubber extrusion).
 - J. Window Framing: Aluminum framing members shall be a min. 0.100 in. thick walls with min. 6-1/2" depth and min. 2-1/2" width of the extrusion and must be compatible with aluminum framing (2b). Locate window framing at least 33 in. above the top surface of the floor assembly.
3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) shall not exceed 8" (joint width measured between deck edge and interior face of curtain wall framing) and the perimeter joint treatment shall incorporate the following construction features:
- A. Packing Material: Cut 4" thick, 4 pcf mineral wool batt insulation** into minimum 4" widths. Rotate the cut pieces to align the fibers parallel to the slab edge. The packing material shall be compressed 50% in the nominal joint. Compress the batt insulation into the perimeter joint with the top surface of the batt insulation flush with the top of

the concrete slab. Splices (butt joints) in the lengths of mineral wool batt insulation are to be tightly compressed together. 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. (** Listed with Omega Point Laboratories)

- B. Fill, Void or Cavity Material: Liquid is to be applied (sprayed, brushed, or troweled) 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 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. 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).