

Design No. CEJ 116 P

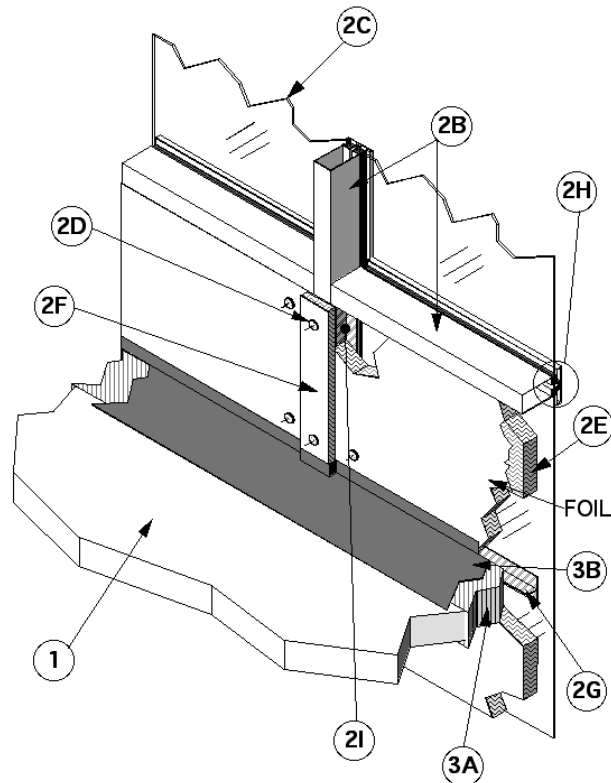
PERIMETER FIRE BARRIER SYSTEM

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 blackout depths (longitudinal recesses) formed in the concrete, to house the architectural cover plate. The blackout 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. Max. distance 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. Min. overall dimensions of framing required is 0.100 in. thick aluminum with a min. 6-1/2 in. height and a min. of 2-1/2 in. width of the extrusion. Mullions are to be spaced a min. 56-1/2 in. o.c. and transoms are to be spaced a min. 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. 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 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).
- D. Impaling Pins: When used with insulation and framing covers, the aluminum pins shall be located, sized and installed according to the curtain wall system manufacturer's guidelines, or be a min. 4-1/2 in. long 12 GA pin attached to a nom. 2 in. by 2 in. plate, a nom. 2 by 2 by 2 in. long angle, or can be 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: A nom. 4 in. thick 4 pcf mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior, installed in the stud cavity. Batts are fitted tightly between vertical framing members secured 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. 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. The nom. 4-in. wide pressure sensitive aluminum foil faced tape is applied over all meeting edges of insulation and framing members so that approx. 2 in. of tape covers each edge of the adjacent material. 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. 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 24 in. wide batts shall be installed without vertical seams spanning the full length between the vertical curtain wall framing members. Batt insulation shall fill the cavity of all "C"-shaped studs. Horizontal seams in the insulation are to be at least 6 in. from the top surface of the perimeter joint treatment.
- F. Framing Covers: Strips made of 1 in. thick by 4 in. wide, 8 pcf, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder) which is exposed to the room interior. Framing covers are centered over each vertical framing member and secured to the member with impaling pins and clips spaced at least 12 in. o.c. and attached in accord with 2d. Framing covers do not pass through the perimeter joint treatment. They are butted to the top and bottom surfaces of the perimeter joint treatment.
- G. Reinforcing Angle: At the horizontal butt joints of the insulation in the field of the glass spandrel panels (2C), place two 20 GA steel angles back to back to form a "T". Locate the "T" reinforcing angle at the horizontal centerline of the perimeter joint protection and secure the "T" angle to the perimeter spandrel angles (2I).
- H. 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 2E.
- I. Perimeter Spandrel Angles: Use a min. 16 GA 1-1/2 x 1-1/2 steel angles around the entire perimeter of spandrel window area. Attach the vertical angles to the mullions with screws. Attach the horizontal angles to the vertical angles with secures.

Fire-Resistant Joint Systems

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 nom. 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 50% 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. 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).