

Design No. TL/JS 120-03

(Formerly Design CEJ 204P)

February 27, 2003

PERIMETER FIRE BARRIER SYSTEM

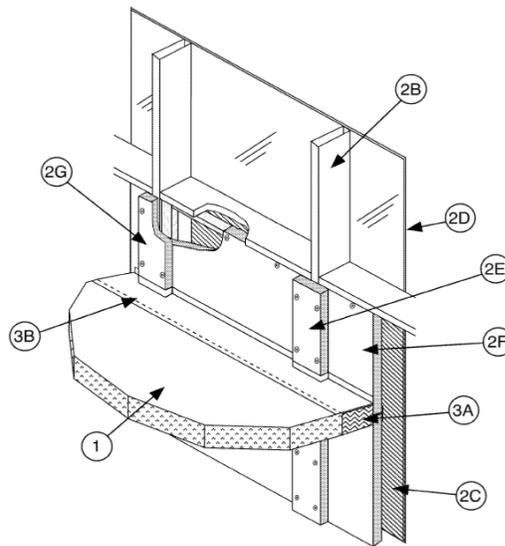
T-Rating - 1/2 hr.

F-Rating - 2 hr.

L-Rating N/A

Rated for $\pm 15\%$ movement

(Intertek)



1. **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 increase to accommodate various blockout depths (longitudinal recesses) formed in the concrete, to house an 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 is required at each floor. The mounting attachments to the floor slab shall be either to the top surface of the floor slab or the joint face of the floor slab, according to the curtain wall manufacturer's instructions. The distance between mounting attachments shall be a min. 60 in. o.c. The mounting attachments shall be steel.
 - 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. 5-1/4 in. height and a min. of 2-1/2 in. width of the extrusion. Mullions are to be spaced a min. 60 in. o.c. and transoms are to be spaced a min. 72 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 Spandrel Panels:** Glass spandrel 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 max. width of 59 in. and height of 71 in. Panels are secured 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 2F.
 - D. **Glass Vision Panels:** Glass vision panels shall be at least 35-1/2 in. above the top surface of the floor assembly and installed to curtain wall framing according to the curtain wall system manufacturer's guidelines. Same min. requirements as in 2C.

- E. **Impaling Pins:** When pins are used instead of screws, they shall be located in the same manner as the screws in 2F, sized and installed according to the curtain wall system manufacturer's guidelines, or be a min. 4-1/2 in. long, 12 GA steel pin attached to a nom. 2 in. by 2 in. galvanized sheet steel plate, a nom. 2 by 2 by 2 in. long angle, or directly attached to the steel panel 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.
 - F. **Curtain Wall Insulation:** All spandrel panels shall be insulated with a min. 2 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. (**Listed with Omega Point Laboratories) They are fitted tightly between vertical framing members, secured with screws placed a max. 8 in. o.c. attached to a min. 16 GA angle around the entire perimeter of each batt. The vertical 16 GA angles are attached to the mullions with screws. The horizontal angles are placed back to back to form a "T". The interior face of the batts is flush with the interior face of the curtain wall framing. A min. 2-in. air space is created between the glass and the insulation. The 36-in. wide batts shall be installed without vertical seams, spanning the full length between the vertical and horizontal curtain wall framing members, which create the spandrel panel area. Horizontal seams in the insulation are to be at least 6 in. from the top surface of the perimeter joint treatment.
 - G. **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. (**Listed with Omega Point Laboratories) 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. Framing covers do not pass through the perimeter joint treatment. They are butted to the top and bottom surfaces of the perimeter joint treatment. The sides of the mullion covers are sealed with aluminum foil tape.
3. **PERIMETER JOINT PROTECTION:** The perimeter joint (linear opening) shall not exceed an 6 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. (** Listed with Omega Point Laboratories) 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.
 - B. **Fill, Void or Cavity Material:** Liquid is to surface of the mineral wool installed in the perimeter joint. Apply a min. 1/16-in. dry film thickness 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: TREMCO, Inc. --Joint Sealant Spray: TREMstop Acrylic-SP
 - C. **Support Clips:** (Not Shown) Support clips are optional but recommended for installations subject to vertical shear movement. Standard Z-shaped clips are 20 GA galvanized steel with the following dimensions: 1 in. wide by 3 in. high with a 2 in. upper leg and 3 in. lower leg.

Cycling: Before testing, the spliced, test specimen was cycled 500 times at 30 cpm in accordance with ICBO ES AC 30 (Jan. 1997) and ASTM E 1966.



Reproduced courtesy of Intertek Testing Services. Copyright © 2008 Intertek Testing Services Inc.