

Design No. CEJ 238 P

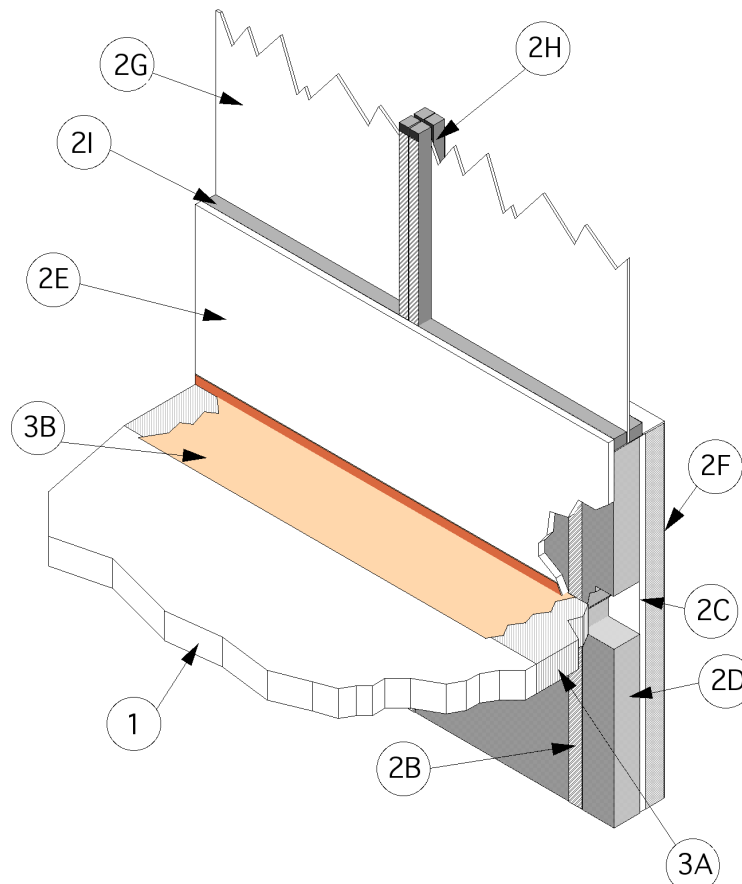
PERIMETER FIRE BARRIER SYSTEM

T-Rating - 1-1/2 hr.

F-Rating - 3 hr

L-Rating <1.0 SCFM/LF

Rated for ± 0% movement vertically or horizontally



1. **CONCRETE FLOOR ASSEMBLY:** 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-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. Max. distance between mounting attachments shall be 10 feet. **Curtain Wall Attachment:** (Not shown) In addition to the mounting attachments, attach the curtain wall to the concrete floor assembly using a min. 1/4 steel clip at mullion locations at a max.

Fire-Resistant Joint Systems

- distance between attachments of 4 feet. Fasten to floor assembly using min. 1/4-in. concrete anchors and to curtain wall assembly using min. 1/4-in. screws.
- B. Steel-Stud Framing: Vertical framing members shall be a min. 3-1/2 in. by 1-5/8 in., 18 GA steel "C" studs secured in an 18 GA steel track top and bottom using #6 x 1.25-inch Bugle head SD PT screws. Vertical framing shall not exceed a spacing of 24 in. o.c.
- C. Sandwiched Wall Surface: Use a min. 1/2 in. thick, 48 in. wide by 96 in. long, exterior grade gypsum wallboard, placed over and secured to framing with min. 1-1/4 in. long Type S drywall screws 8 in. o.c. on the periphery and 12 in. o.c. in the field.
- D. Curtain Wall Insulation: A nom. 24-in wide by 48-in. tall 4-pcf, 4 in. thick unfaced mineral wool batt insulation is installed in each stud cavity so that the batt extends continuously from a min. 8 in. below the slab to a min. 20 in. above the slab. Batt is fitted tightly between vertical framing members. Mechanically fasten the insulation with min. 2 in. x 2 in., 20 gauge steel angle with a min. 5 in. copper coated steel pin extending from the center of the side of the angle that was installed parallel with the gypsum wall board. Locate the steel angle equipped with the pins vertically so that there are two assemblies within each stud cavity. Locate one pin 16 in. above the top of the concrete slab and locate one pin just below the level of the bottom of the concrete slab. The curtain wall insulation shall completely fill the recess of the min. 3-5/8 in. by 1-5/8 in., 18 GA steel "C" studs.
- E. Interior Curtain Wall Surface: Use a min. 1/2 in. thick, 48 in. wide by 96 in. long, Type X gypsum wallboard, placed over and secured to framing with #6 by 1-1/4-in. long Type S drywall screws 8 in. o.c. on the periphery and 12 in. o.c. in the field. Screw heads are covered with joint compound. Joints created between gypsum wallboard are taped and floated with joint compound. Gypsum wallboard only required to be continuously placed a min. 20 in. above surface of perimeter joint protection. Gypsum wallboard below the slab is optional.
- F. Exterior Curtain Wall Surface: An Exterior Insulation Finish System (EIFS) is composed of an expanded polystyrene foam (EPS) insulation, a base coat, a float coat, a reinforcing mesh, and a finish coat. The EIFS system is a monolithic assembly without expansion or control joints. The EPS foam boards measure 24 inches wide by 48 inches long by 4 inches thick with a nominal density of 1 pcf. The EPS foam is attached to the sandwiched wall surface using an adhesive, which is a polymer based material mixed with 1-1/2 to 2 gallons of potable water per 50-pound bag. Apply adhesive using a 3/8 by 3/8-inch notched trowel to the entire backside surface of each EPS board. Install the EPS boards in a running bond (brick-like) pattern and staggered over sandwiched wall surface (2C) joints. Apply pressure to the EPS boards to assist in the bonding process. All EPS boards must be butted together with no gaps or voids between them. Allow a minimum of 12 hours before continuing the application process. The EPS boards must be rasped to remove all irregular seams and establish a continuous flat surface. The base coat and reinforcing mesh is applied next. Precut the mesh as needed. The mesh is a woven fiberglass reinforcement fabric that is compatible with the base coat and finish coat materials. Mix 1-1/2 to 2 gallons of potable water per 50-pound bag of adhesive and apply 1/6 to 1/8-inch thick to the exposed surface of the EPS foam. Apply the mesh; embed the mesh into the base coat using a trowel. Start at the middle and work outwards towards edges. The final thickness of the base coat with the mesh embedded should be approximately 1/16-inches. Let the base coat dry completely before applying the finish coat. The finish coat is an acrylic polymer wall coating containing silica sand or marble aggregates. Apply the finish coat using a trowel in the same manner as the base coat.
- 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

Fire-Resistant Joint Systems

- 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 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 steel-stud framing (2B). 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 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 25% 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 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™ 100 Spray

This Design Listing was created using the information outlined in the Introduction to the Fire-Resistant Joint Systems Section. Please refer to that Introduction to complement the Design Listing.