Design No. CEJ 370 P

PERIMETER FIRE BARRIER SYSTEM

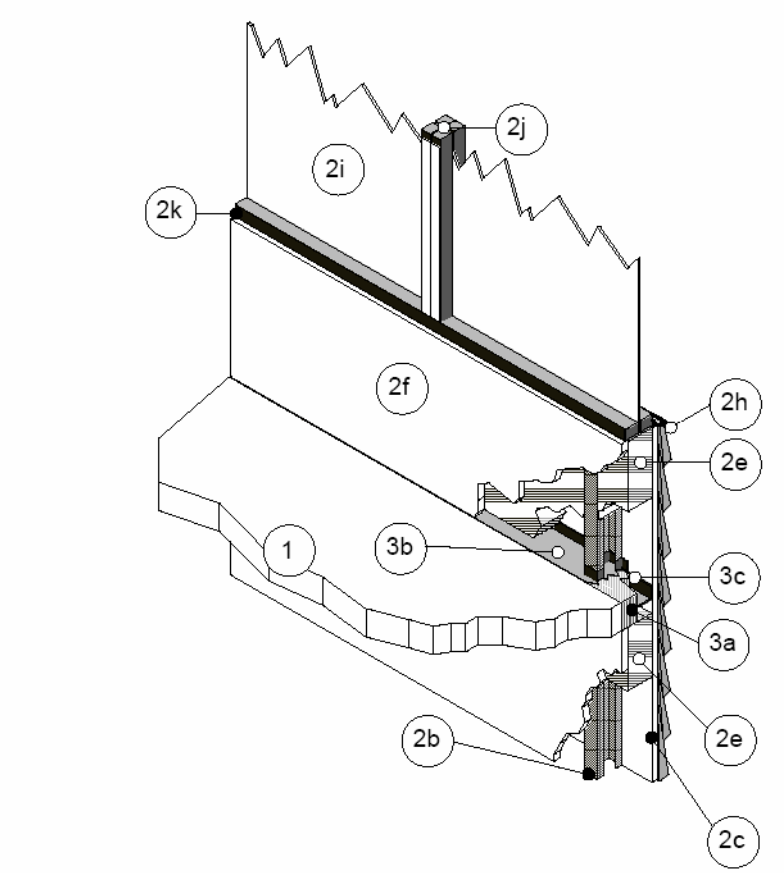
T-Rating – 1 hr.

F-Rating - 2 hr.

L-Rating <1 SCFM

Rated for ± 0% horizontal movement

Rated for ± 0% vertical shear movement



1. CONCRETE FLOOR ASSEMBLY: Minimum. 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. Optional – Provided the two-hour concrete floor assembly rating is not compromised, the overall slab thickness may vary to accommodate various blockout depths (longitudinal recesses) formed in the concrete, to house an optional architectural joint system. 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.

B. Steel-Stud Framing: Vertical framing members shall be a min. 6-inch by 1-5/8-inch, 16 GA steel "C" studs secured in an 16 GA steel track top and bottom using min. #6 x 1.25-inch Bugle head SD PT screws. Vertical framing shall not exceed a spacing of 24-inches o.c. The steel-stud framing shall be secured to the concrete floor assembly with curtain wall clips.

C. Sandwiched Wall Surface: Use a min. 5/8-inch thick, 48-inch wide by 96-inch long, exterior grade fiberglass sheathed gypsum board placed over and secured to framing with min. 1-1/4-inch long Type S drywall screws 8-inch o.c.

D. Curtain Wall Clips: Min. 18 GA steel “stair-like” clip measuring min. 1-inch wide affixed to each vertical framing member using 5/8-inch long sheet metal screws and to the surface of the concrete floor assembly using min. ¼-inch diameter by 1-inch long concrete screws. The clips can be welded to the vertical framing members and to the structural pour stop at the edge of the concrete floor assembly provided that this method does not interfere with the installation of the perimeter joint protection.

E. Optional Curtain Wall Insulation: Curtain wall insulation is not required. However, it can be installed above or below the perimeter joint protection. When used, secure the insulation in accordance with the manufacturer’s installation instructions. Mineral wool or glass fiber batt insulation are acceptable.

F. Optional Interior Curtain Wall Surface: An interior curtain wall surface is not required. However, it can be installed above or below the perimeter joint protection. When used, secure the interior curtain wall surface in accordance with the manufacturer’s installation instructions. Gypsum board is acceptable.

G. Optional Knee-Wall: A “knee-wall” is not required. However, it can be installed above the perimeter joint protection. When using a knee-wall with 6-inch steel stud construction, the 6-inch wide steel track at the bottom of the knee-wall can replace the curtain wall clips. The 6-inch steel track shall be attached to each vertical framing member using 5/8-inch long sheet metal screws and to the concrete floor assembly using min. ¼-inch diameter by 1-inch long concrete screws.

H. Exterior Curtain Wall Finish: The exterior finish shall not create voids or openings in the sandwiched wall surface and shall extend at least 8-inches above and at least 24-inches below the surface of the concrete floor assembly. The following finishes are acceptable:

(1) Exterior Insulation Finish System: Any Listed and Labeled EIFS composed of an expanded polystryrene foam (EPS) insulation, and a Exterior Curtain Wall Finish consisting of the following. A plaster base coat and reinforcing mesh is applied over the sandwiched wall surafce. Precut the mesh as needed. The mesh is a woven fiberglass reinforcement fabric that is compatible with the plaster base coat and finish coat materials. Apply 1/16 to 1/8-inch thick plaster base coat to the exposed surface of the EPS foam. The EPS foam boards nominally measure 24 inches wide by 48 inches long by a maximum of 4 inches thick with a nominal density of 1 pcf. The EPS foam is attached to the sandwiched wall surface using mechanical fasteners or an adhesive in accordance with manufacturer’s recommendations. Install the EPS boards in a running bond (brick-like) pattern and staggered over sandwiched wall surface 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 when using adhesive. The EPS boards must be rasped to remove all irregular seams and establish a continuous flat surface. Apply the mesh over the EPS; embed the mesh into the plaster base coat using a trowel. Start at the middle and

work outwards towards edges. The final thickness of the plaster base coat with the mesh embedded should be approximately1/16-inches. Let the base coat dry completely before applying the plaster finish coat. The plaster finish coat is a gypsum based wall coating which may contain silica sand or marble aggregates. Apply the plaster finish coat using a trowel in the same manner as the plaster base coat. Other installation techniques are acceptable when detailed by the manufacturer. The EIFS system is a monolithic assembly without expansion or control joints.

(2) 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 framing o.c. spacing, which allows the glass to be secured between the notched shoulder of the framing and pressure bar. Panels are secured with a thermal break (rubber extrusion), pressure bar (extrusion), min. 1/4-20 x 5/8 in. long screws, and a snap face (extrusion) or other manner as detailed by the manufacturer. The system is a monolithic assembly without expansion or control joints.

(3) Aluminum Panels: Minimum 1/8-inch thick aluminum panels secured to the steel-stud framing in accordance with the manufacturer's installation instructions. When framing for the aluminum panels is required, it is to be installed with the manufacturer's installation instructions. The system is a monolithic assembly without expansion or control joints.

(4) Brick: Use any conventional brick and mortar type. Any brick pattern is acceptable. Mortar joints not to exceed 7/8-inches. Secure bricks to wall assembly using conventional acceptable masonry construction techniques. The system is a monolithic assembly without expansion or control joints.

(5) Stucco: Any Listed and Labeled stucco system is acceptable provided that the following is abided by: When EPS is used, that the EPS foam boards nominally measure a maximum of 4 inches thick with a nominal density of 1 pcf. The stucco manufacturer confirms the stucco is compatible with the sandwiched wall surface. The system is a monolithic assembly without expansion or control joints.

(6) Stone: Use any conventional stone panel and mortar type measuring at least 1-inch thick. Any stone pattern is acceptable. Mortar joints not to exceed 7/8-inches. Secure stones to wall assembly using conventional acceptable masonry construction techniques. The system is a monolithic assembly without expansion or control joints.

(7) Siding: Any Listed and Labeled siding system is acceptable provided that the following is abided by: The siding shall be classified as non-combustible. The system is a monolithic assembly without expansion or control joints.

(8) GFRC Panels: Glass fiber reinforced concrete panels shall be at least 1-inch thick and attached in accordance with the manufacturer's installation instructions. The system is a monolithic assembly without expansion or control joints.

I. Optional 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 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).

J. Optional Window Gaskets: When required by the manufacturer, secure glass vision panels with a thermal break (thermal-set rubber extrusion).

K. Optional Window Framing: Framing material shall be non-combustible. Locate window framing at least 8 inches

above the top surface of the floor assembly.

3. PERIMETER JOINT PROTECTION: The perimeter joint (linear opening) shall not exceed an 8-1/2 in. nom. joint width (joint width at installation) between the interior face of the sandwiched wall surface and the vertical face of the concrete floor assembly. 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**. Two-step installation. (1) Install pieces of mineral wool batt insulation between the vertical framing members. Cut and install the mineral wool batt insulation with the fibers running perpendicular to the slab edge and curtain wall. Cut the mineral wool batt insulation at least ¼-inch longer than the length between the vertical framing members and 1/8-inch greater than the depth of the steel-studs. There shall be no voids. (2) Install pieces of mineral wool batt insulation in the longitudinal void created between the vertical face of the concrete floor assembly and the mineral wool batt insulation. Cut and install the mineral wool batt insulation with the fibers running parallel to the slab edge and curtain wall. The packing material shall be compressed 20% in the the longitudinal void created between the vertical face of the concrete floor assembly and the mineral wool batt insulation. 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 compressed together at least ½-inch. 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 spray 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. For sealants, apply a minimum of ¼-inch thickness. Reference Product Section of this Directory for more details about the Listed product.

Listed Manufacturer:

3M

Joint Sealant
Spray

FireDam™ Spray 100

FireDam™ Spray 200

Fire Barrier 1000 Sealant

Fire Barrier 1003 Sealant

   C. Optional Reinforcing Angle: Not required. 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.

** 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)

