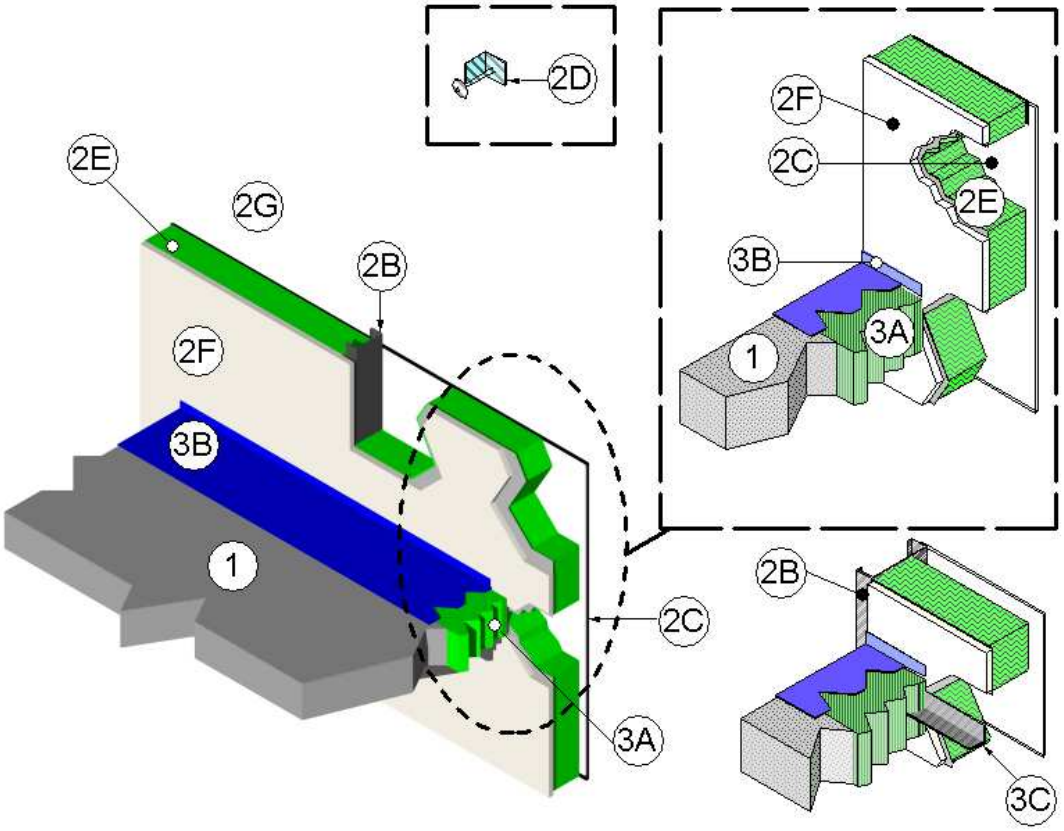
Design Number 3MU/JS 120-16
(Formerly OPL Design No. CEJ 164 P)
PERIMETER FIRE BARRIERS
3M Company
FireDam™ Spray 200, Fire Barrier 1000 NS Silicone Sealant and
Fire Barrier 1003 SL Silicone Sealant
ASTM E 2307
T-Rating 0 hr
F-Rating 2 hr
ASTM E 2307/ASTM E 1399 Cycling
Class IV: 500 cycles @ 30 cpm
Rated for ± 16.7% horizontal movement @ 25% Compression (Reference Item 3A)
UL 2079
L-Rating <1.0 SCFM/LF



1. CONCRETE FLOOR ASSEMBLY: Two-hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100 to 150 pcf, having a minimum thickness of 4-1/2" at the joint face. When a longitudinal recess (blockout) is required to contain an architectural joint system, increase concrete floor assembly thickness to maintain a minimum thickness of 4-1/2" and accommodate depth of blockout formed in the concrete: blockout width unrestricted.

2. CURTAIN WALL ASSEMBLY: Incorporate the following construction features into the curtain wall assembly:
   A. Panel Mounting Attachment: (Not shown) Install steel attachments to the structural framing (Item 2B) according to the curtain wall manufacturer's instructions. When required, connect the steel mounting attachments to the joint face of the concrete floor assembly (Item 1) according to the curtain wall manufacturer's instructions. Limit distance between steel mounting attachments to maximum 120".
   B. Steel Stud Framing: Use minimum 3-5/8" by 1-5/8", 18 GA, C-shaped steel studs as vertical framing. Attach according to the curtain wall system manufacturer's guidelines. Limit distance between vertical steel stud framing to maximum 48". Limit distance between horizontal steel stud framing to maximum 72". When required, install horizontal structural framing members according to the curtain wall system manufacturer's guidelines and, in the spandrel area, locate a minimum of 33" above the top surface of the concrete floor assembly (Item 1).
   C. Glass Panels: Sized and installed into steel framing (Item 2B) according to the curtain wall system manufacturer's guidelines. Use minimum 1/4" thick clear, heat strengthened (HS) glass or tempered glass with a maximum width and height less than the steel framing (Item 2B) oc spacing, which allows the glass to be secured between the notched shoulder of the steel framing (Item 2B) and pressure bar. Secure glass panels with a thermal break (rubber extrusion), pressure bar (aluminum extrusion), minimum 1/4-20 x 5/8" long screws, and a snap face (aluminum extrusion).
   D. Impaling Pins: When used with curtain wall insulation (Item 2E), locate, size and install impaling pins according to the curtain wall system manufacturer's guidelines, or be a minimum 4-1/2" long, 12 GA pin attached to one of the following: a nominal 2" by 2" plate; a nominal 2" by 2" by 2" long angle; or can be directly attached to the steel stud framing (Item 2B) using a stud gun. Space impaling pins a maximum of 12" oc. Install impaling pins around the periphery of the curtain wall insulation (Item 2E) so that its interior face is flush with the interior face of the steel stud framing (Item 2B).
   E. Curtain Wall Insulation: Use nominal 24" wide, 4" thick, 4-pcf density, 3" thick, 6-pcf density, or 2" thick, 8-pcf density, mineral wool batt insulation. Install curtain wall insulation by fitting in each stud cavity between steel stud framing (Item 2B) using clips, impaling pins (Item 2D), or friction fit by using a curtain wall insulation lengths at least 1/4" longer than the distance between steel stud framing (Item 2B). Maintain 1-1/4" air cavity between curtain wall insulation and glass panels (Item 2C). Completely fill the recess of the "C-shaped" steel stud framing (Item 2B) with curtain wall insulation. Tightly compress together butt joints in the lengths of curtain wall insulation by using minimum 1/4" compression per piece of curtain wall insulation material. Tape all adjacent edges between curtain wall insulation, or between steel stud framing (Item 2B) and curtain wall insulation, with min. 4" wide pressure sensitive aluminum foil tape, centered over the seam. Locate horizontal seams in the curtain wall insulation at least 6" above or below the top surface of the perimeter joint protection (Item 3). Use only Intertek certified products meeting the above minimum requirements.
   F. Interior Curtain Wall Surface: Continuously cover interior face of steel stud framing (Item 2B) with one layer of 5/8" thick, Type X gypsum board. Fasten gypsum board to steel stud framing (Item 2B) using minimum #6 1-1/8" long bugle-head phillips drywall screws spaced nominally 12" oc. Joint Tape and Compound – Apply vinyl or

casein, dry or premixed joint compound to exposed face of gypsum board in two coats to all exposed screw heads and gypsum board joints. Embed minimum 2" wide paper, plastic, or fiberglass tape in first layer of premixed joint compound over joints in gypsum board. Create wall cavity between unexposed face of gypsum board to unexposed face of steel panel (Item 2C).

3. PERIMETER JOINT PROTECTION: Do not exceed an 8" nominal joint width (joint width at installation). Incorporate the following construction features for the perimeter joint protection (also known as perimeter fire barrier system):
   A. Packing Material: Install reinforcing angle (Item 3C). Use a minimum 4" thick, 4-pcf density, mineral wool batt insulation installed with the fibers running parallel to the edge of concrete floor assembly (Item 1) and curtain wall assembly (Item 2). Cut packing material width to achieve required compression, refer below, when installed in the nominal joint width. Compress the packing material into the perimeter joint. Tightly compress together splices (butt joints) in the lengths of packing material by using minimum 1/4" compression per piece of packing material. When a spray coating is used, locate the top surface of the packing material flush with the top surface of the concrete floor assembly (Item 1). When the non-sag or self leveling silicone sealant is used, recess the top surface of the packing material 1/4" from the top surface of the concrete floor assembly (Item 1). Use only Intertek certified products meeting the above minimum requirements.
      I. When 25% compression is required cut the width of the packing material 1.34 times wider than the nominal joint width.

   B. CERTIFIED COMPANY: 3M Company

      CERTIFIED PRODUCT: FireDam™ or Fire Barrier™

      MODEL: FD Spray 200 (Elastomeric, Sprayable) or FB 1000 N/S Silicone Sealant (Non-sag) or FB 1003 S/L (Self Leveling)

      Fill, Void or Cavity Material: Apply either spray coating or sealant over the packing material (Item 3A) as follows:
      Spray Coating – Spray apply the liquid to cover the exposed top surface of the packing material (Item 3A) compressed and installed in the perimeter joint. Apply a minimum wet film thickness of 1/8" and overlap the spray coating a minimum 1/2" onto the adjacent curtain wall assembly (Item 2) and concrete floor assembly (Item 1). When the spraying process is stopped and the applied spray coating cures to an elastomeric film before installation process is restarted, then overlap the edge of the cured spray coating at least 1/8" with the liquid spray coating.
      Sealant – Apply non-sag or self leveling sealant to cover the exposed surface of the packing material (Item 3A) compressed and installed in the perimeter joint. Apply minimum 1/4" thickness non-sag or self leveling sealant over the packing material (Item 3A) and finish flush with the top surface of the concrete floor assembly (Item 1).
   C. Reinforcing Angle: Position reinforcing angle against interior curtain wall surface (Item 2F) and mechanically attach with minimum #8, 1-1/2" long screws at each vertical steel stud framing (Item 2B), install a nominal 1-1/2 by 1-1/2", 20 gauge, steel angle at mid depth of the packing material (Item 3A) and running perpendicular to the vertical steel stud framing (Item 2B).