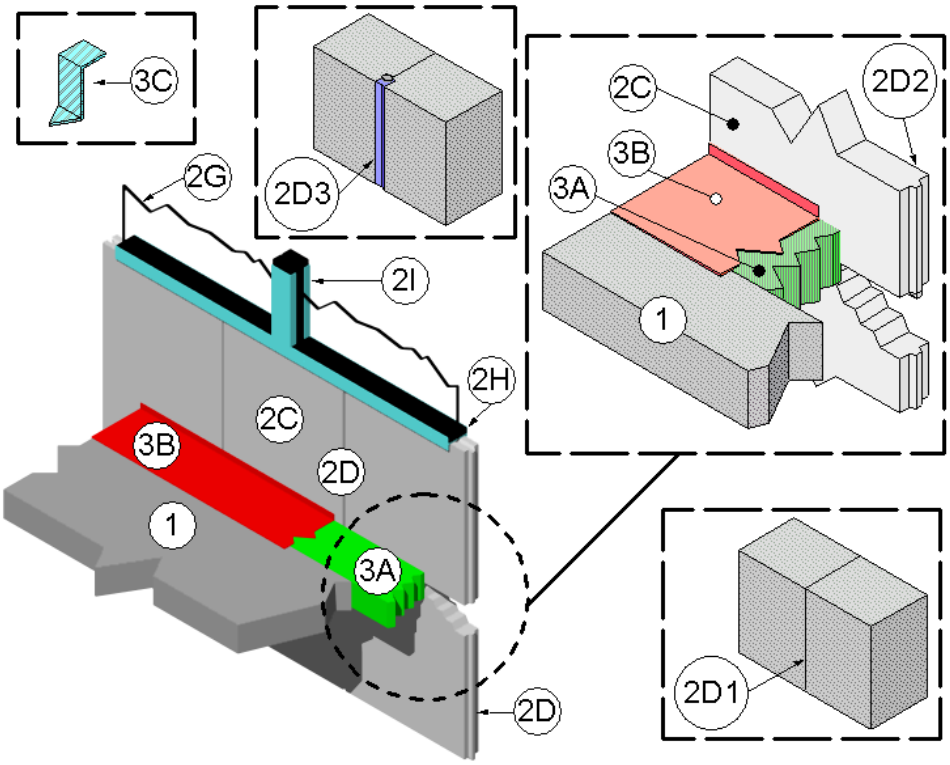
Design Number 3MU/JS 120-13
(Formerly OPL Design No. CEJ 158 P)
PERIMETER FIRE BARRIERS
3M Company
FireDam™ Spray 200, Fire Barrier 1000 NS Silicone Sealant and
Fire Barrier 1003 SL Silicone Sealant
ASTM E 2307
T-Rating Refer to Compression Percentage
F-Rating 2 hr
ASTM E 2307/ASTM E 1399 Cycling
Class IV: 500 cycles @ 30 cpm
Rated for ± 16.7% horizontal movement @ 50% Compression (Reference Item 3A): T-Rating 1/4 hr
Rated for ± 11% horizontal movement @ 33% Compression (Reference Item 3A): T-Rating 0 hr
Rated for ± 5% horizontal movement @ 20% Compression (Reference Item 3A): T-Rating 0 hr
Rated for ± 6.25% vertical shear movement @ 50% 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.

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2. CURTAIN WALL ASSEMBLY: Incorporate the following construction features into the concrete tilt-up curtain wall assembly:
   A. Panel Mounting Attachment: (Not shown) Install steel attachments to the tilt-up panels (Item 2C) and 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. Structural Framing: (Not Shown) Install structural framing members according to the curtain wall system manufacturer's requirements. 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). When required, the panel mounting attachments (Item 2A) to the concrete floor assembly (Item 1) shall be connected to the joint face of the floor slab, according to the curtain wall manufacturer's instructions. When aluminum is used, completely conceal aluminum structural framing with tilt-up panels (Item 2C).
   C. Tilt-up Panels: Use minimum 1-1/2" thick, reinforced lightweight or normal weight concrete (100 to 150 pcf density). Attach tilt-up panels to structural framing (Item 2B) according to the curtain wall system manufacturer's requirements.
   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 tilt-up 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. Concrete Panel Joint: No through joints allowed. When required, the surface of the concrete panel joints can be sealed with gaskets or sealants. Use one of the following for vertical and horizontal concrete panel joints:
      I. flush type (butt joint) (Item 2F1),
      II. key way type (tongue and groove) (Item 2F2), or
      III. recessed (Item 2F3).
   G. Framing Covers: Make from strips of 1", 8 pcf density, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder),

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which is exposed to the room interior. Cut strips a minimum 1-1/2" wider than steel stud framing (Item 2B). Center framing covers over all steel stud framing (Item 2B) and secure using impaling pins (Item 2D). Do not pass framing covers through the perimeter joint protection (Item 3). Allow framing covers to abut the top and the bottom surfaces of the perimeter joint protection (Item 3) provided that no deformation occurs. Use only Intertek certified products meeting the above minimum requirements.

H. Glass Vision Panels: When required, use optional glass vision panels a minimum 33" above the top surface of the floor assembly (Item 1). Install glass vision panels to curtain wall framing according to the curtain wall system manufacturer's guidelines. Use a minimum 1/4" thick, clear tempered glass with a nominal width and height as determined by the framing.

I. Window Gaskets: When optional glass vision panels used, secure glass vision panels with a thermal break (thermal-set rubber extrusion).

J. Window Framing: When glass vision panels used, use steel framing members a minimum 3-5/8" by 1-5/8", 18 GA steel, U-shaped channel or similar construction compatible with structural framing (Item 2B). Locate window framing at least 33" above the top surface of the concrete floor assembly (Item 1).

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: 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 50% compression is required cut the width of the packing material 2 times wider than the nominal joint width.

II. When 33% compression is required cut the width of the packing material 1.5 times wider than the nominal joint width.

III. When 20% compression is required cut the width of the packing material 1.25 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

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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. Support Clips: (Optional) Recommended for installations subject to vertical shear movement. Use standard 20 GA galvanized steel Z-shaped clips having the following nominal dimensions: 1" wide by 3" high with a 2" upper leg and a 3" lower leg.

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