

3M Company
Design No. 3MU/JS 120-17
Perimeter Fire Barriers
ASTM E2307 / ASTM E1399 / UL 2079 / CAN/ULC-S115

FireDam™ Spray 200, Fire Barrier Watertight Spray, Fire and Water Barrier Tape FWBT, Fire Barrier 1000 NS Silicone Sealant, and Fire Barrier 1003 SL Silicone Sealant

33% Compression

F-Rating

2 Hr

T-Rating

3/4 Hr

**L-Rating
(UL 2079)**

<1.0 SCFM/LF

Cycling (%)

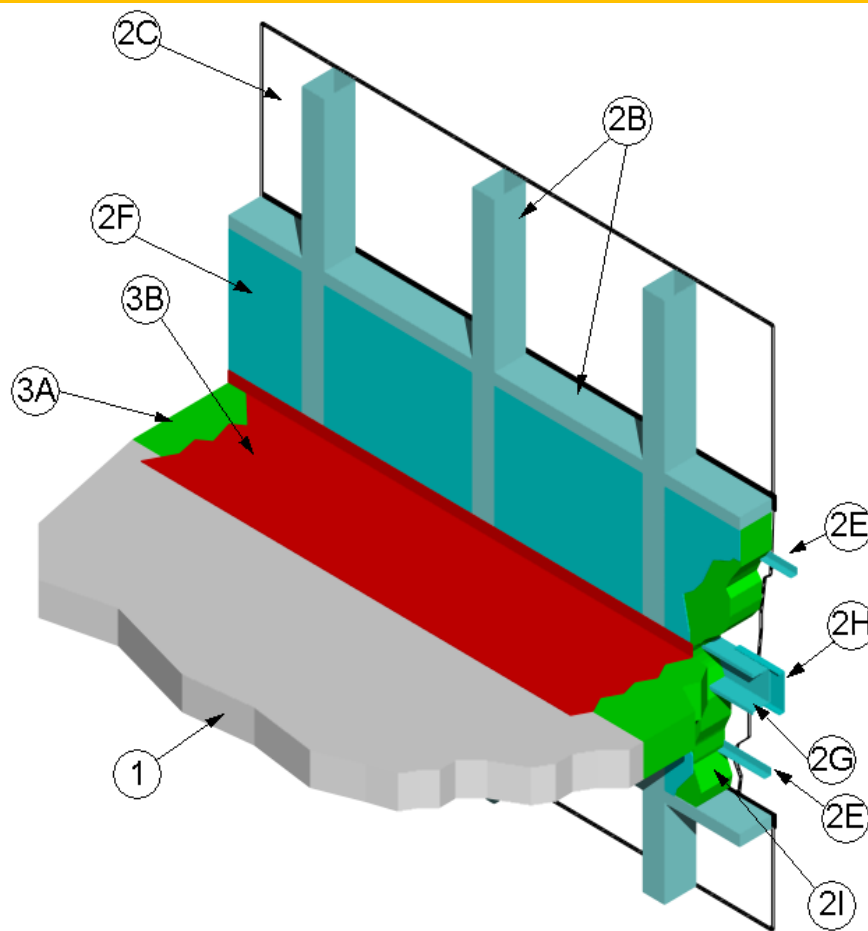
Class IV: 500 cycles @ 30 cpm

Horizontal

± 10.0

Vertical

± 6.25





1. **CONCRETE FLOOR ASSEMBLY:** 2 hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100 to 150 pcf, having a min. thickness of 4-1/2 in. 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 min. thickness of 4-1/2 in. and accommodate depth of blockout formed in the concrete: blockout width unrestricted.
2. **CURTAIN WALL ASSEMBLY:** Incorporate the following construction features:
 - A. **MOUNTING ATTACHMENT (Not Shown):** Attach aluminum framing (Item 2B) to the structural framing according to the curtain wall manufacturer's instructions. When required, connect the mounting attachments to the joint face of the concrete floor assembly (Item 1) according to the curtain wall manufacturer's instructions. Limit distance between mounting attachments to max. 60 in. on center (oc).
 - B. **ALUMINUM FRAMING:** Use hollow rectangular aluminum extruded tubing with min. overall dimensions of 0.100 in. thick, 4 in. high and 2-1/2 in. wide. Locate mullions (vertical aluminum framing) min. 60 in. oc and locate transoms (horizontal aluminum framing) a min. 10 in. oc. For the spandrel region, locate the bottom of the upper transom (horizontal aluminum framing) at a min. flush with the top of the concrete floor assembly (Item 1).
 - C. **GLASS PANELS:** Sized and installed into aluminum framing (Item 2B) according to the curtain wall system manufacturer's guidelines. Use min. 1/4 in. thick clear, heat strengthened (HS) glass or tempered glass with a max. width and height less than the aluminum framing (Item 2B) oc spacing, which allows the glass to be secured between the notched shoulder of the aluminum framing (Item 2B) and pressure bar. Secure glass panels 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).
 - D. **ALUMINUM ANCHOR BRACKETS (Not Shown):** Use min. 9/16 in. thick aluminum anchor brackets to serve as part of the mounting attachment (Item 2A) and are rigidly secured to the aluminum framing (Item 2B) with 1/2 in. diameter, 2-1/4 in. long, Grade 5, anchor bolts.
 - E. **STEEL RETAINER ANGLE:** (Required when transoms are located more than 12 in. above and/or below the floor in the spandrel region). Place a min. 22 GA, 1-1/2 in. x 1-1/2 in. angle horizontally 12 in. above and below the floor line in the spandrel area, and secure to the aluminum framing (Item 2B) with No. 10 sheet metal screws. Orient the angle so that the horizontal flange is below the vertical flange and situate the horizontal flange to fully embed into the curtain wall insulation of the steel back pan. Steel retainer angle is not applicable for the alternate location of the horizontal aluminum framing transom located flush with the concrete floor assembly (Item 1) as described in Item 2B.
 - F. **STEEL BACKPAN:** Install min. 22 GA, galvanized steel backpan filled with curtain wall insulation (Item 2I) adhered to the back pan with latex adhesive and steel face facing the interior face of the aluminum



framing in the spandrel region. Secure the backpan to the aluminum framing (Item 2B) with 1 in. long, hex-head, sheet steel screws.

- G. **BACKPAN STIFFENER:** (Required when upper transom is more than 3 in. above floor and when transoms exceed 10 in. oc in the spandrel region). Secure min. 18 GA, galvanized, hat-shaped, stiffener placed horizontally and measuring 4 in. wide x 3 in. deep and having 1 in. flanges to the backpan with No.10, sheet steel screws. Position the lower flange of the stiffener within the plane of the packing material (Item 3A), and space the screw holding the top flange of the stiffener to the backpan (Item 2F) a min. of 2-7/32 in. above the top surface of the concrete floor assembly (Item 1). Backpan Stiffener is not applicable for the alternate location of the horizontal aluminum framing transom located flush with the concrete floor assembly (Item 1) as described in Item 2B.
- H. **STEEL PATCHES:** Where required, horizontally place 6 in. wide, 22 GA, galvanized steel C-shaped patches measuring 6 in. wide and 1-1/2 in. deep, centered on the outside of the backpan stiffener (Item 2G) and secure patches to the stiffener with No. 10, sheet steel screws. Steel patches are not applicable for the alternate location of the horizontal aluminum framing transom located flush with the concrete floor assembly (Item 1) as described in Item 2B.
- I. **CURTAIN WALL INSULATION:** Fill the cavity of the steel backpan (Item 2F) with nominal 3 in. thick, 8 pcf density, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder), which faces the

room interior. Tightly fit, compress at least 1/4 in. in all directions, the mineral wool batt insulation within the backpan (Item 2F) and adhere to the backpan with latex adhesive. Use only Intertek certified products meeting the above min. requirements.

3. **PERIMETER JOINT PROTECTION:** Do not exceed a 6 in. 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 min. 4 in. 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 min. 1/4 in. 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 in. from the top surface of the concrete floor assembly (Item 1). Use only Intertek certified products meeting the above min. requirements.
- i. When 33% compression is required cut the width of the packing material 1.5 times wider than the nominal joint width.
- B. **CERTIFIED MANUFACTURER:** 3M Company



CERTIFIED PRODUCT: FireDam™ or Fire Barrier™

MODEL: FD Spray 200 (Elastomeric, Sprayable) Fire Barrier Watertight Spray (Elastomeric, Sprayable) or Fire and Water Barrier Tape FWBT (Tape) 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 min. wet film thickness of 1/8 in. FireDam Spray 200 or 1/10 in. Fire Barrier Watertight Spray and overlap the spray coating a min. 1/2 in. 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 in. with the liquid spray coating.

TAPE – Apply the tape such that there is a min. 1 in. overlap onto the adjacent curtain wall assembly (Item 2) and the concrete floor assembly (Item 1). Overlap joints in the tape system by 1/2 in.

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 min. 1/4 in. 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).

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

Consult the listing report on the Directory of Building Products (<https://bpdirectory.intertek.com>) for the edition of the standard(s) evaluated.

Compliance of the assembly described in this Design Listing with the referenced standard relies on verification that the assembly constructed in the field is consistent with that described herein. Intertek certified products may be verified by the approved Intertek label; other products must be verified by the Authority Having Jurisdiction as meeting the specifications stated herein.