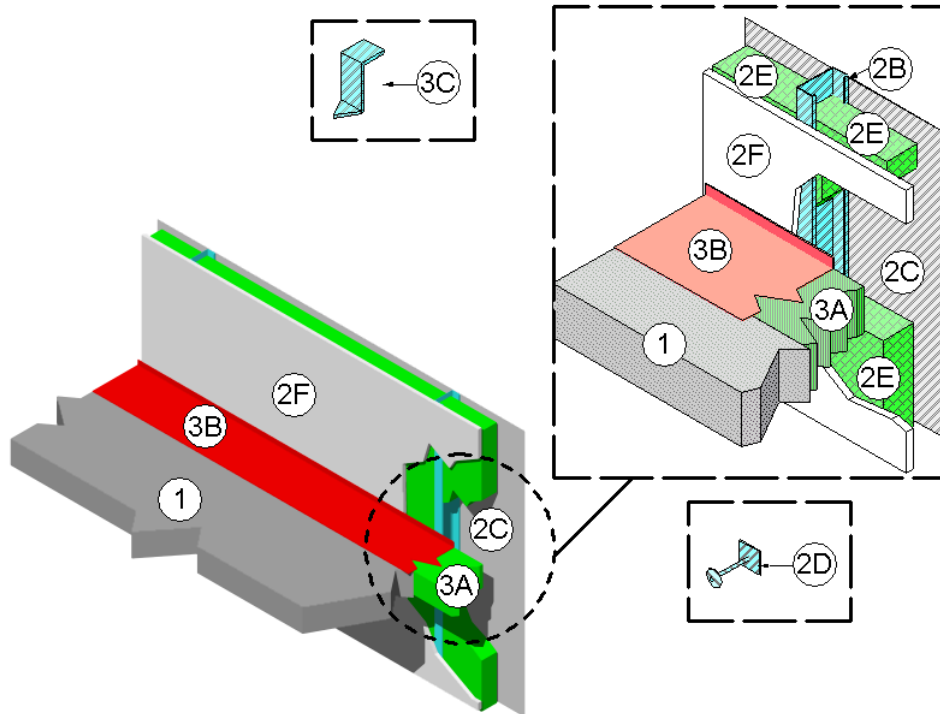


3M Company
Design No. 3MU/JS 120-06
Perimeter Fire Barriers
ASTM E 2307/ASTM E 1399 Cycling

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			
	50% Compression	33% Compression	20% Compression
F-Rating	2 Hr	2 Hr	2 Hr
T-Rating	1/4 Hr	0 Hr	0 Hr
L-Rating (UL 2079)	<1.0 SCFM/LF	<1.0 SCFM/LF	<1.0 SCFM/LF
Cycling (%)	Class IV: 500 cycles @ 30 cpm	Class IV: 500 cycles @ 30 cpm	Class IV: 500 cycles @ 30 cpm
Horizontal	± 16.7	± 11	± 5
Vertical	± 6.25	-	-

±: Fire Barrier Watertight Spray cycling rating limited to ±10% horizontal movement





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 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 minimum 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 steel stud 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 maximum 120 in.
 - B. **STEEL STUD FRAMING –** Use minimum 3-5/8 in. by 1-5/8 in., 18 GA, C-shaped steel studs as vertical framing. Attach according to the curtain wall system manufacturer's guidelines. Limit distance between steel stud framing to maximum 48 in. oc. When required, install horizontal structural framing members according to the curtain wall system manufacturer's guidelines and, in the spandrel area, upper transom located flush with the top surface of the concrete floor assembly (Item 1).
 - C. **ALUMINUM PANELS –** Install minimum 1/8 in. thick aluminum panels with maximum dimensions of 48 in. by 144 in. to steel stud framing (Item 2B) according to the curtain wall system manufacturer's guidelines.
 - 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 in. long, 12 GA pin attached to one of the following: a nominal 2 in. by 2 in. plate; a nominal 2 in. by 2 in. by 2 in. 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 in. on center. 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 in. wide, 4 in. thick, 4-pcf density, 3 in. thick, 6-pcf density, or 2 in. 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 in. longer than the distance between steel stud framing (Item 2B). Maintain 1-1/4 in. air cavity between curtain wall insulation and aluminum 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 in. compression per piece of curtain wall insulation material. Use only Intertek certified products meeting the above minimum requirements.



F. **INTERIOR CURTAIN WALL SURFACE** – Entirely cover interior face of steel stud framing (Item 2B) with one layer of 5/8 in. thick, Type X gypsum board. Fasten gypsum board to steel stud framing (Item 2B) using minimum #6, 1-1/8 in. long bugle-head Philips drywall screws spaced nominally 12 in. on center. 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 in. wide paper, plastic, or fiberglass tape in first layer of premixed joint compound over joints in gypsum board. Create minimum 3-5/8 in. deep wall cavity between unexposed face of gypsum board to unexposed face of aluminum panel (Item 2C).

G. **GLASS VISION PANELS** - (Optional) When used, locate glass vision panels above spandrel area and a minimum flush with the top surface of the concrete floor assembly (Item 1). Install glass vision panels to window framing (Item 2I) according to manufacturer's guidelines. Use a minimum 1/4 in. thick, clear tempered glass with maximum width and height as determined by the window framing (Item 2I).

H. **WINDOW GASKETS** – When glass vision panels (Item 2G) used, use a thermal break (thermo-set rubber extrusion) to secure glass vision panels (Item 2G).

I. **WINDOW FRAMING** – When glass vision panels used, use steel framing members a minimum 3-5/8 in. by 1- 5/8 in., 18 GA steel, U-shaped channel or similar construction compatible with structural framing (Item 2B). Locate window framing

at least flush with the top surface of the concrete floor assembly (Item 1).

3. PERIMETER JOINT PROTECTION: Do not exceed an 8 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 minimum 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 minimum 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 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) Fire Barrier Watertight Spray (Elastomeric, Sprayable), or Fire and Water Barrier Tape FWBT (Tape)

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 in. FireDam Spray 200 or 1/10-in. Fire Barrier Watertight Spray and overlap the spray coating a minimum 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 minimum 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).

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 in. wide by 3 in. high with a 2 in. upper leg and a 3 in. lower leg.