

**Design Number TRC/BP 120-08**  
**PERIMETER FIRE BARRIERS**

Rectorseal Corporation  
Biostop 750, Biostop 800, FlameSafe FS 3000, FlameSafe FS 4000, Metacaulk 1200 Spray, and  
Metacaulk 1500 Spray

**ASTM E 2307**

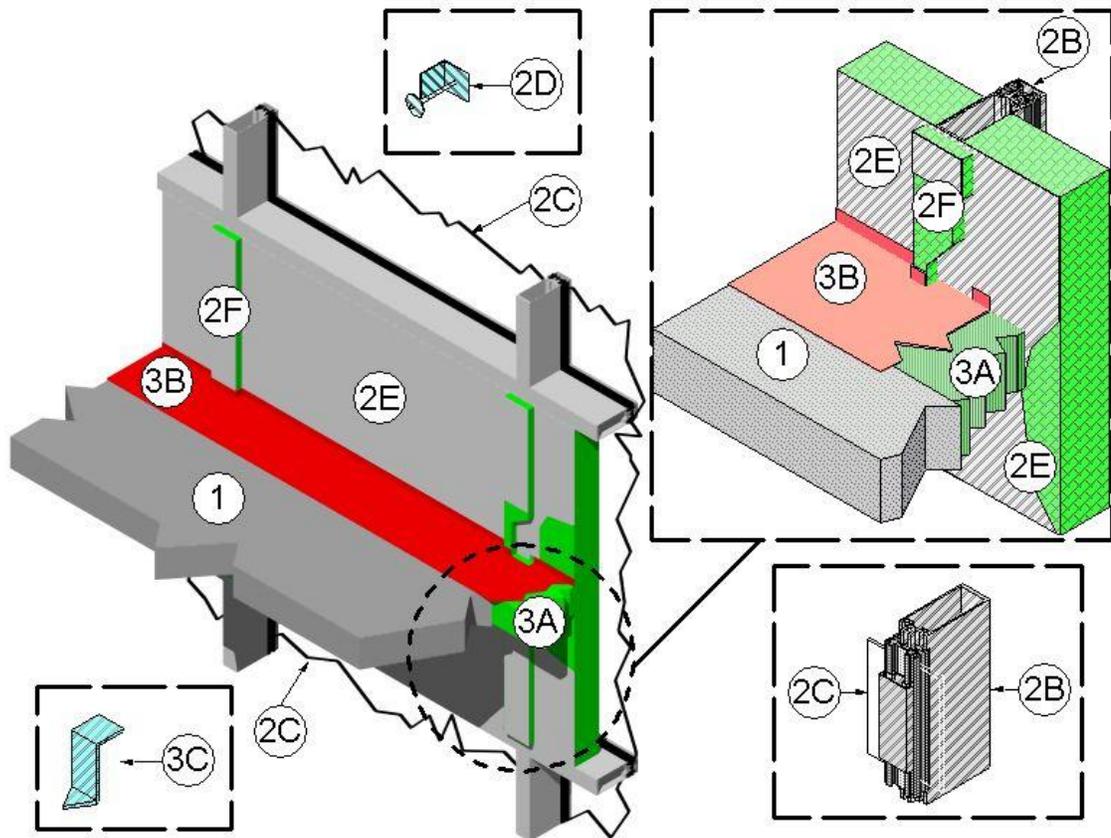
T-Rating 1/4 hr

F-Rating 2 hr

**ASTM E 2307/ASTM E 1399 Cycling**

Class IV: 500 cycles @ 30 cpm

± 15% horizontal movement



1. **CONCRETE FLOOR ASSEMBLY:** Two-hour rated concrete floor assembly (Item 1) 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)

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- 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. 48 in..
- B. Aluminum Framing: Use hollow rectangular aluminum extruded tubing with min. overall dimensions of 0.100 in. in. 6-1/2 in. high and 2-1/2-in. wide. Locate mullions min. 60 in. on center (oc) and locate transoms a min. 34 in. oc. For the spandrel region, locate the lower transom min. 13-3/4 in. below the concrete floor assembly (Item 1) as measured from the underside of the floor to the top side of the transom and locate the upper transom a min. 4-1/2 in. above the concrete floor assembly (Item 1) as measured from the top surface of the floor to the underside of the transom.
- 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 on center spacing, which allows the glass to be secured between the notched shoulder of the aluminum framing 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. Impaling Pins: When used with curtain wall insulation (Item 2E) and framing covers (Item 2F), locate, size and install impaling pins according to the curtain wall system manufacturer's guidelines, or be a min. 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 aluminum framing (Item 2B) using a stud gun. Space impaling pins a max. of 12 in. 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 aluminum framing (Item 2B).
- E. Curtain Wall Insulation: Use a nominal 4 in. thick, 4 pcf, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder), which is exposed to the room interior and installed the full depth of the stud cavity. Install curtain wall insulation between aluminum framing (Item 2B). Secure curtain wall insulation with clips, impaling pins, or friction fit using curtain wall insulation length at least 1/4 in. longer than the distance between aluminum framing (Item 2B). Seal all meeting edges of curtain wall insulation with nominal 4 in. wide pressure sensitive aluminum foil faced tape centered over the junction so that approximately 2 in. of tape covers each edge of the adjacent curtain wall insulation. Apply pressure sensitive aluminum foil faced tape over all meeting edges of curtain wall insulation and aluminum framing (Item 2B) so that approximately 2 in. covers each edge of the adjacent material. When required, compress interior face of curtain wall insulation flush with the interior face of the aluminum framing (Item 2B). Install 24 in. wide curtain wall insulation without vertical seams, spanning the full length between aluminum framing (Item 2B). Locate horizontal seams in the curtain wall insulation at least 6 in. from the top surface of the perimeter joint protection (Item 3). Option – in lieu of filling the full depth of the stud cavity with 4 in. thick, 4 pcf curtain wall insulation, use min. 2 in. thick, 8 pcf curtain wall insulation mechanically secured and must use additional horizontal support angle mechanically attached to aluminum framing (Item 2B). When using of 2 in. thick, 8 pcf curtain wall insulation (Item 2E), add

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- a horizontal support angle consisting of a min. 16 GA steel angle, having 1.5 x 1.5 in. legs and locate horizontally at the mid height of the packing material (Item 3A) and attached to each mullion of aluminum framing (item 2B). Equip horizontal support angle with min. 15 in. long vertical upturns at each end forming a "U" shape. Create 15 in. long vertical upturns by cutting one of the legs of the horizontal support angle and bending the uncut leg of horizontal support angle upwards. Attach these 15 in. long vertical upturns to the mullions of aluminum framing (item 2B) with screws.
- F. Framing Covers: Framing Covers: Make from strips of min. 1 in. thick by min. 4 in. wide, 8 pcf density, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder), which is exposed to the room interior. Center framing covers over all aluminum 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 top and bottom surfaces of the perimeter joint protection (Item 3) provided that no deformation occurs.
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 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 50% compression 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. Use only Intertek certified products meeting the above min. requirements. 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).
- B. CERTIFIED MANUFACTURER: Rectorseal Corporation
- CERTIFIED PRODUCT: Biostop, FlameSafe, Metacaulk
- MODEL: Biostop 750, Biostop 800, FlameSafe FS 3000, FlameSafe FS 4000, Metacaulk 1200 Spray, or Metacaulk 1500 Spray
- 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. 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.
- 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).
- C. Support Clips: (Optional) Recommended for installations

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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.