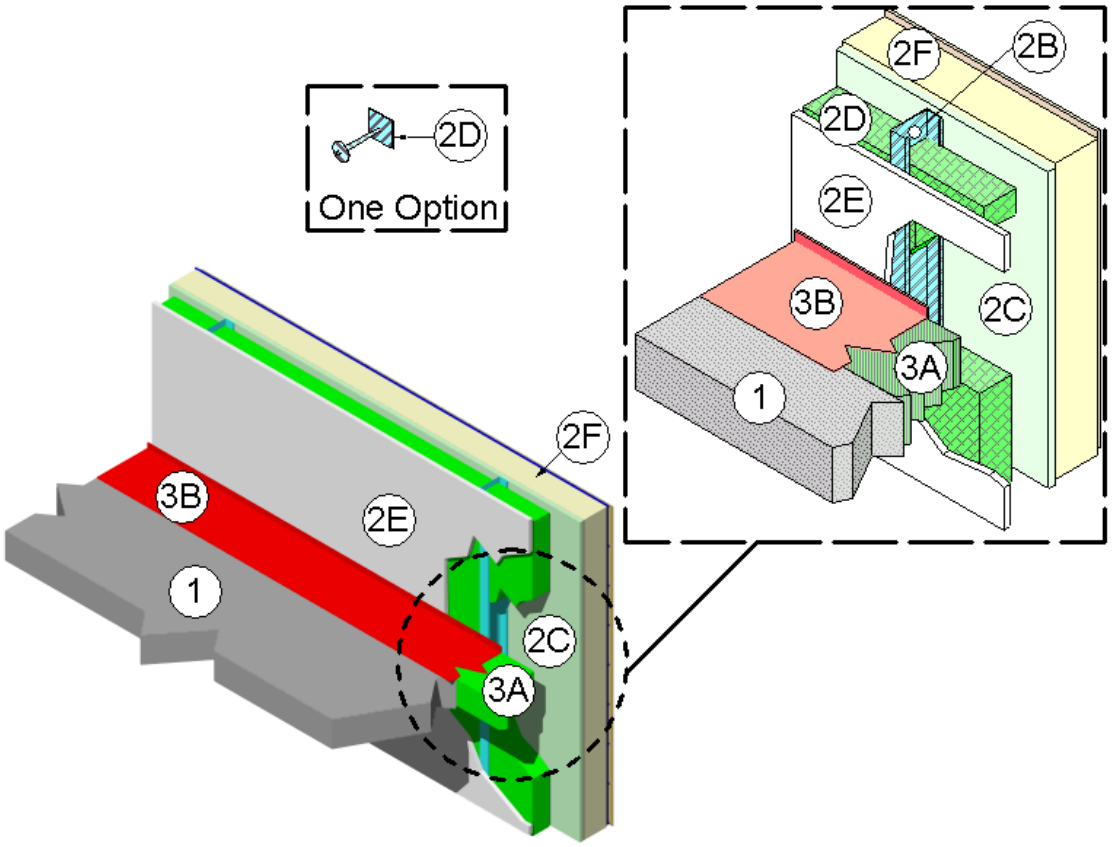
Division 07 Thermal Protection
07 84 00 Firestopping
07 84 53 Building Perimeter Firestopping

Design Number TRC/BP 60-01
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 hr
F-Rating1 hr
ASTM E 2307/ASTM E 1399 Cycling
Class IV: 500 cycles @ 30 cpm
± 15% horizontal movement
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 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 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 max.48 inches.

B. Steel Stud Framing: Use min. 3-1/2 in. by 1-1/4 in., 18 GA, C-shaped steel studs as interior vertical framing. Secure steel studs in 18 GA appropriate sized steel tracks, located top and bottom, using #6 x 1-1/4 in. long bugle head SD PT screws. Limit distance between steel stud framing to max. 16 in.. When required, install horizontal framing members according to the curtain wall system manufacturer's guidelines.

C. Sandwiched Wall Surface: Use a min. 1/2 in. thick, 48 in.wide by 96 in. long, exterior grade gypsum board, placed over and secured to exterior face of steel stud framing (Item 2B) with 1 in. long Type S drywall screws spaced 8 in. on center (oc) around the periphery and 12 inches on center in the field.

D. Curtain Wall Insulation: Use nominal 24 in. wide, 4 in. thick, un-faced, 4 pcf, mineral wool batt insulation. Use only Intertek certified products meeting the above min. requirements. Install curtain wall insulation in each stud cavity and locate so that 10±1/2 inches is above the top surface of the perimeter joint protection (Item 3). Cut curtain wall insulation at least 16-1/2 in. long and fit tightly between vertical steel stud framing (Item 2B), secured with clips, impaling pins, or friction fit. Completely fill the recess of the "C-shaped" steel stud framing (Item 2B) with curtain wall insulation.

E. Interior Curtain Wall Surface: Use minimum 5/8-inch thick, 48-inch wide, 96-inch long, Type X gypsum board placed over and secured to exterior face of steel stud framing (Item 2B) with #6, 1-7/8-inch long, Type S drywall screws spaced 8 inches on center around the periphery and 12 inches on center in the field. Cover screw heads with joint compound. Tape and float joints created between gypsum board with joint compound.

F. Exterior Curtain Wall Surface: Apply an Exterior Insulation Finish System (EIFS) composed of an expanded polystryrene foam (EPS) insulation, a base coat, a adhesive coat, a reinforcing mesh, and a finish coat. Install the EIFS system as a monolithic assembly without expansion or control joints. Use EPS foam boards measuring min. 24 in. wide, 48 in. long, and 4 in. thick with a nominal 1-pcf density. Attach EPS foam to the sandwiched wall surface using an adhesive, which is a polymer based material mixed with 1-1/2 to 2 gallons of potable water per 50-pound bag of adhesive. Apply adhesive using a 3/8 in.notched trowel to the entire backside surface of each EPS board. Install the EPS boards in a running bond (bricklike) pattern and staggered over the joints of the sandwiched wall surface (Item 2C). Apply pressure to the EPS boards to assist in the bonding process. Butt all EPS boards together with no gaps or voids between them. Allow a min. of 12 hours before continuing the application process. Rasp the EPS boards to remove all irregular seams and establish a continuous flat surface. Next apply the base coat and reinforcing mesh. Precut the mesh, which is a woven fiberglass reinforcement fabric that is compatible with the base coat and finish coat materials, as needed. Mix1-1/2 to 2 gallons of potable water per 50-pound bag of adhesive and apply 1/6 to 1/8 in. thick to the exposed surface of the EPS foam. Apply and embed the mesh into the base coat using a trowel. Start at the middle and work outwards towards edges. Establish a final thickness of the base coat with the

mesh embedded at approximately 1/16 in.. Let the base coat dry completely before applying the finish coat, which is an acrylic polymer wall coating containing silica sand or marble aggregates. Apply and establish thickness of the finish coat using a trowel in the same manner as the base coat.

3. PERIMETER JOINT PROTECTION: Do not exceed a 4 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 25.6% 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 inch 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 subject to possible 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.