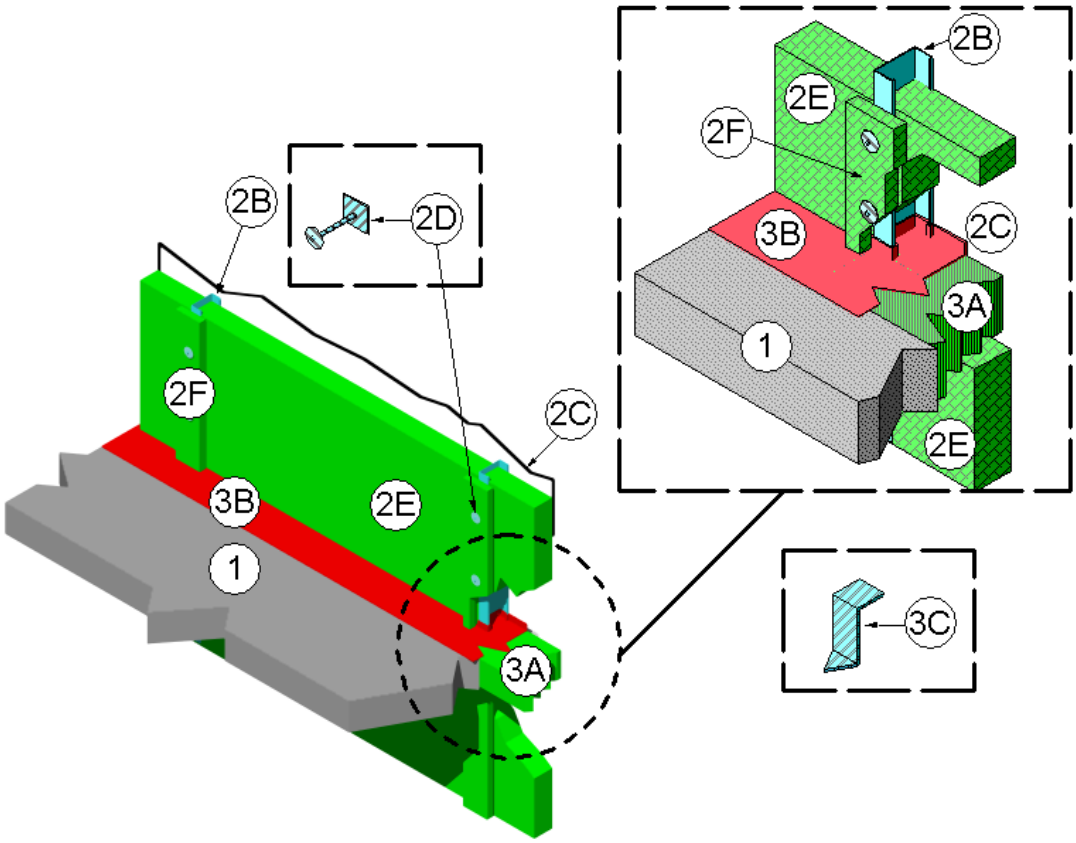
Design Number TFI/BPF 120-05
PERIMETER FIRE BARRIERS
Thermafiber, Inc.
FireSpan® 90 and FireSpan® 40 and Safing™
ASTM E 2307
T-Rating Refer to Compression Percentage
F-Rating 2 hr
ASTM E 2307/ASTM E 1399 Cycling
Class IV: 500 cycles @ 30 cpm
Rated for ± 16.7% horizontal movement @ 50% Compression (Reference 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): T-Rating 0 hr
UL 2079
L-Rating ambient and elevated (400℉): <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 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 on center (oc).

   B. Steel Stud Framing: Use minimum 5-1/2 in. by 1-5/8 in., 18 gauge (GA), C-shaped steel studs as vertical framing spaced maximum 24 in. oc. Limit distance between steel stud framing to maximum 48 in. oc. Install horizontal structural framing members to maximum 72 in. oc. In the spandrel area, locate a minimum of 33 in. above the top surface of the concrete floor assembly (Item 1).

   C. Glass Panels: Install glass panels into curtain wall framing according to the curtain wall system manufacturer's guidelines. Use a minimum 1/4 in. thick, clear heat-strengthened (HS) or tempered glass with a maximum width of 48 in..

   D. Impaling Pins: (Optional) Install minimum 12 GA steel pins sized to extend minimum 1/2 in. through the framing covers (Item 2F). Attach pins using a 2 in. x 2 in. steel plate, 2 in. x 2 in. steel angle or directly attached to the steel stud framing (Item 2B) using a stud gun. Space pins maximum 12 in. oc.

   E. CERTIFIED COMPANY: Thermafiber, Inc.

   CERTIFIED PRODUCT: Insulation Mineral Wool

   MODEL: Thermafiber, Inc. FireSpan® 90 and FireSpan® 40

   Curtain Wall Insulation: Use nominal 24 in. wide, 4 in. thick, 4 pcf density or 2 in. thick, 8 pcf density, mineral wool batt insulation. Friction fit curtain wall insulation in each stud cavity between steel stud framing (Item 2B) by using a curtain wall insulation width 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 glass 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. Tape all adjacent edges between curtain wall insulation, or between steel stud framing (Item 2B) and curtain wall insulation, with minimum 4 in. wide pressure sensitive aluminum foil tape, centered over the seam. Locate horizontal seams in the curtain wall insulation at least 6 in. above or below the top surface of the perimeter joint protection (Item 3).

   F. CERTIFIED COMPANY: Thermafiber, Inc.

   CERTIFIED PRODUCT: Insulation Mineral Wool

   MODEL: Thermafiber, Inc. FireSpan® 90

   Framing Covers: Make from strips of 1 in., 8 pcf density, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder), which is exposed to the room interior. Cut strips a minimum 1-1/2 in. 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.

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. CERTIFIED COMPANY: Thermafiber, Inc.

   CERTIFIED PRODUCT: Insulation Mineral Wool

   MODEL: Thermafiber, Inc. Safing ™

   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).

   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.

   C. Fill, Void or Cavity Material: Apply 3M FireDam™ Spray 200 (Elastomeric, Sprayable) or Fire Barrier™ 1000 N/S Silicone Sealant (Non-sag) or FB 1003 S/L (Self Leveling) Sealant (bearing the Intertek Certification Mark) 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. 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.

   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. Install 3 in. horizontal leg impaled into packing material (Item 3A) mid-depth and the 2 in. horizontal leg on top of the concrete floor assembly (Item 1). Install clips adjacent to mounting bracket (Item 2A) and spaced maximum 12 in. oc.

D. Reinforcing Angle: (Not Shown) Locate reinforcing angle at all horizontal butt joints of the curtain wall insulation (Item 2E) in the field of the glass spandrel panels (Item 2C) and horizontal centerline of the perimeter joint protection (Item 3). Place two minimum 20 GA steel angles having 1.5 in. x 1.5 in. legs back to back to form a “T” shape.