Specified Technologies, Inc.
Design No. STI/BPF 180-03
Perimeter Fire Barrier System
SpecSeal® Window Wall Gasket
SpecSeal® SIL300 Silicone Sealant
ASTM E2307, CAN/ULC-S115
Ratings: F-Rating – 3 Hour
T-Rating* – 0 Hour or 1 Hour
***(See Item 1 and 3)**

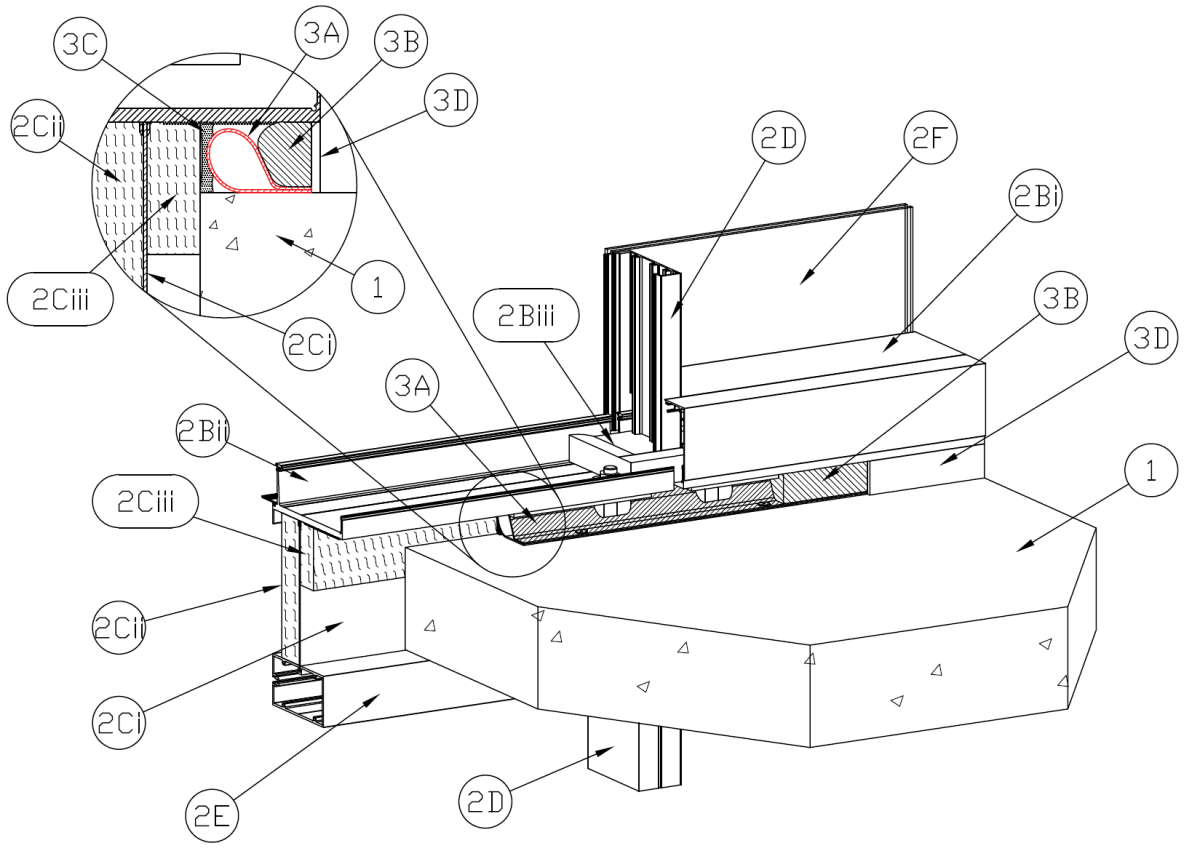


Figure 1 - Isometric

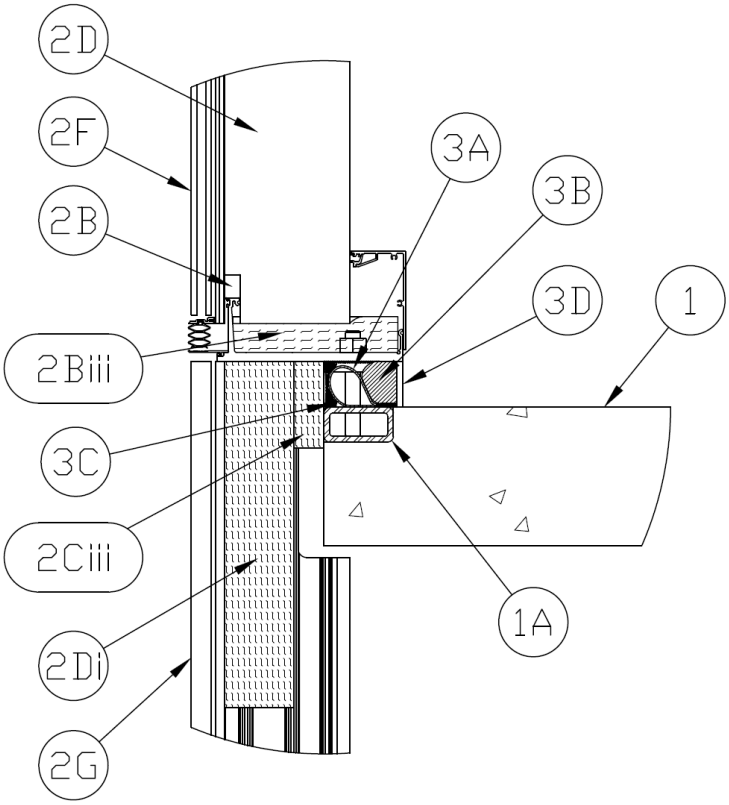


Figure 2 - Base Detail at Anchor

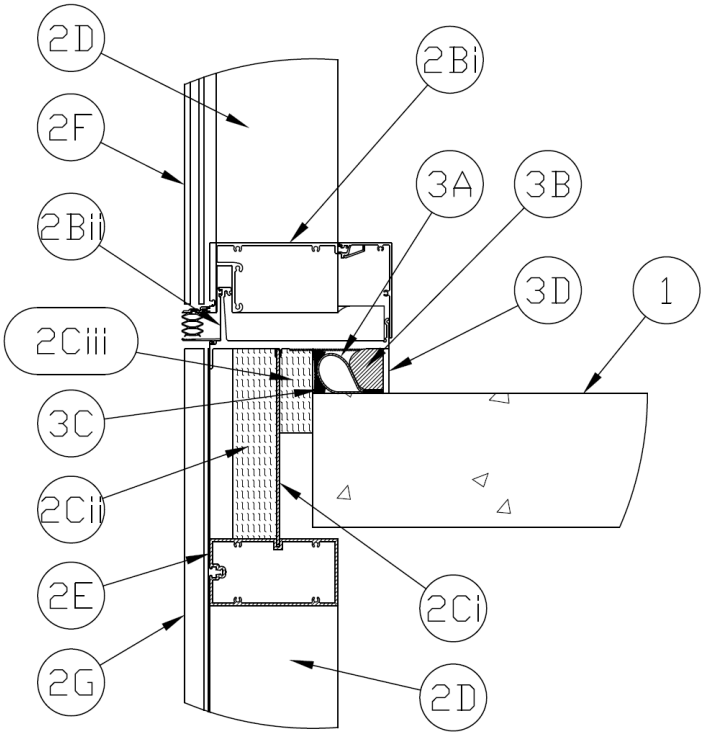


Figure 3 - Base Detail

1. **CONCRETE FLOOR ASSEMBLY:** Min. one-hour rated concrete floor assembly, constructed from lightweight or normal weight concrete (density 100–150 pcf), with a minimum thickness of 6 in. (152 mm) at the joint face. F rating will be determined by the rating of the concrete floor assembly system up to a max. 3-hr F-rating. For concrete floor assemblies with a rating of less than 3 hours, T-Rating shall be 0.

   A. **STEEL EMBEDS**: Install nominal 16-inch (406 mm) long, 1-1/2-inch (38 mm) tall, 3-inch (76 mm) deep steel tube embeds with 7/8-inch (22 mm) slots on the top face, centered at each mullion to accommodate the mounting attachment (Item 2A) in accordance with the window wall assembly (Item 2) manufacturer's instructions. Embeds are cast-in-place, flush with the edge and top of the concrete floor assembly, per the anchor manufacturer's instructions.

2. **CERTIFIED PRODUCT:** Peerless Products, Inc., Window Wall Assembly; Talon Wall® System

   WINDOW WALL ASSEMBLY: Construct the exterior window wall assembly to comply with applicable building codes and regulations, incorporating the following features at a minimum:

   A. **MOUNTING ATTACHMENT** – The mounting attachments to the floor consist of nominal 5 in. (127 mm) long × 3/4 in. (19 mm) diameter threaded studs that engage the anchor system through the anchor head transom (Item 2B-ii) and the slots in the steel embeds (Item 1A). A 3/4 in. (19 mm) steel nut is used with the steel threaded stud to control the vertical position of the wall. Install two studs per mullion, one on each side, spaced nominally 7 inches (178 mm) apart on center.

   B. **STACK JOINT** – The true stack joint is comprised of the Upper Transom (Item 2B-i) and the Anchor Head (Item 2B-ii). It is adjustable, with a height ranging from 3-3/4 inches (95 mm) fully closed to 4-3/4 inches (121 mm) fully open. The max. gap between the Upper Transom and the Anchor Head at the exterior of the wall is 1-1/4 in. (32 mm). The stack joint may include a single or double chicken head design and an optional latched cap on the interior to cover the core space. The construction gap seal (Item 3) between the top of the floor and the underside of the stack joint is a max. 2-1/4 inches (57 mm).

      i. **UPPER TRANSOM:** The upper transom is constructed from nominal 1/8-inch (3 mm) thick extruded aluminum, featuring an exterior wet chamber and interior geometry to receive the "chicken head" from the anchor head (Item 2B-ii), forming the stack joint. The front-to-back width is approximately min. 6 in. (152 mm).

      ii. **ANCHOR HEAD**: The anchor head is constructed of nominal 1/8 in. (3 mm) thick extruded aluminum with a complex shape. The height of the

anchor head extrusion, from the bottom to the top of the "chicken head," is nominally 2-3/4 in. (70 mm) and the width from front to back is min. 7-7/8 in. (200 mm). The anchor head contains a wet chamber on the exterior side and the interior dry side is created using a single or double "chicken head" design per the wall manufacturer detail. The upper transom (Item 2B-i) and the anchor head engage at the stack joint and the bottom of the anchor head extrusion is positioned a max. 2-1/4 in. (57 mm) above the top of the concrete floor assembly surface.

iii. **CERTIFIED PRODUCT:** Rockwool, Mineral Wool; Roxul SAFE

PACKING MATERIAL (TROUGH INSULATION): Install minimum 3-inch (76 mm) thick, 4 pcf (64 kg/m³) density mineral wool, cut to min. 6 inches (152 mm) in length and width, inside the anchor head trough on the interior side of the outer chicken head. Center the insulation over the joint between adjacent panels, extending a minimum of 3 inches (76 mm) on each side. Install uncompressed, allowing compression from the upper transom during panel installation.

C. **SPANDREL SECTION** – The Spandrel between the underside of the stack joint (Item 2B) and the top of the transom below the floor spans a vertical space from a maximum of 2-1/4 inches (57 mm) above the floor to a maximum of 3 inches (76 mm) below the floor. The spandrel includes the following components:

i. **STEEL BACKPAN** – Install a min. 14 gauge steel backpan into the wall framing. The backpan is a flat sheet of galvanized steel. It is not mechanically secured to the framing but is free-floating within the spandrel. The anchor head (Item 2B-ii) and the lower transom (Item 2E) both incorporate grooves in the extruded shape that serve as guides to support the lateral position of the backpan. The backpan is recessed a max. 1-5/8 in. (41 mm) from the edge of the floor (Item 1), max. 4-3/4 in. (120 mm) from the interior surface of the anchor head (Item 2B-ii), and max. 2-5/8 in. (66 mm) from the interior side of the mullion (Item 2D). Seal the backpan perimeter with silicone sealant for vapor barrier and weather resistance.

ii. **CERTIFIED PRODUCT:** Rockwool, Mineral Wool; Curtainrock 80

EXTERIOR BACKPAN INSULATION – Use min. 2 in. (51 mm) thick, faced or unfaced, min. 8 pcf (128 kg/m³) mineral wool curtain wall insulation, secured to the exterior side of the backpan (Item 2C-i) with 2 in. long steel cuphead pins welded to the backpan. Pins are to be placed in a

single row on the horizontal centerline of the backpan, spaced max. 6 in. (152 mm) from the mullions and max. 12 in. (305 mm) on center.

iii. **CERTIFIED PRODUCT:** Rockwool, Mineral Wool; Roxul SAFE

INTERIOR BACKPAN INSULATION – Use min. 4 pcf (64 kg/m^3) mineral wool curtain wall insulation, secured to the interior side of the backpan (Item 2C-i) with adhesive backed steel impaling pins. The min. 2-3/4 in. (70 mm) thick strip of insulation extends from the underside of the anchor head transom (Item 2B-ii) down a min. of 3-1/2 inches into the gap between the edge of the floor and the backpan which measures a max. 1-5/8 in. (41 mm). Use a minimum of two pins, spaced a maximum of 6 inches (152 mm) from mullions and 24 inches (610 mm) on center. Fix pin bases to the backpan, bending pins upward to temporarily to hold insulation in place until compressed during wall attachment, achieving a minimum 41% compression.

D. **MULLIONS:** Vertical framing members are constructed of nominal 1/8 in. (3 mm) extruded aluminum. Mullions can be constructed as solid members, or as joining members that are split vertically. Mullions feature an exterior wet chamber and an interior dry chamber, with a minimum depth of 5-3/4 inches (146 mm) and a minimum width of 2-3/4 inches (70 mm). Space mullions a minimum of 40-3/8 inches (1026 mm) on center. At the floor, a 2-1/4-inch (57 mm) deep notch is cut in the mullion, extending min. 8-5/8 inches (219 mm) vertically, from a maximum of 2-1/4 inches (57 mm) above the floor to a maximum of 3 inches (76 mm) below.

i. **CERTIFIED PRODUCT:** Rockwool, Mineral Wool; Roxul SAFE

FRAMING FILL: The core of each mullion, from the underside of the stack joint extending a min 16 in. (406 mm) downward, is filled with 4 pcf (64 kg/m^3) mineral wool safing insulation that is held in place with adhesive backed impaling pins and speed washers until the mullions are clipped together creating a min. 25% compression.

E. **TRANSOMS:** Horizontal framing members, other than the stack joint transom (Item 2B), are constructed of nominal 1/8 in. (3 mm) extruded aluminum. Transoms can be constructed as solid members, or as joining members that are split horizontally. Transoms are designed with a wet chamber on the exterior side and a dry chamber on the interior side. Transoms have a min. depth of 5-3/4 in. (146 mm) and a min. width of 3 in. (76 mm).

F. **VISION PANELS** : Vision panels must comply with exterior window wall assembly (Item 2) design specifications.

Glazing panels may be secured in position with aluminum pressure plates in conjunction with glazing gaskets and steel screws, or with structural silicone installed in accordance with the manufacturer's instructions.

G. **EXTERIOR SPANDREL CLADDING:** Install glazing or an exterior cladding system that complies with applicable building code and regulatory requirements. Install in accordance with the exterior curtain wall assembly manufacturer's instructions and the design specifications. Glazing panels or other specified cladding may be secured in position with aluminum pressure plates in conjunction with glazing gaskets and steel screws or with structural silicone installed in accordance with the manufacturer's instructions.

H. **SHADOW BOX:** (Optional, Not shown) – A shadow box installed on the exterior side of the exterior backpan insulation (Item 2C-ii) may be formed of any material that complies with applicable building code and regulatory requirements. Install in accordance with the exterior curtain wall assembly manufacturer's instructions and the design specifications.

I. **EXTERIOR GRADE SEALANT** – (Optional, Not shown) At the seams between panels, exterior grade silicone sealant may be installed for weatherproofing as needed per the wall assembly design specifications.

3. **CONSTRUCTION GAP SEAL** - Maximum separation between top of concrete floor assembly (Item 1) and underside of the transom is 2-1/4 in. (57 mm). Separation between the underside of the concrete floor assembly and the lower transom (Item 2E) is max. 3 inches (76 mm). When the gap exceeds 1/2 inch (13 mm), the T-Rating shall be 0 Hr. The seal system shall incorporate the following construction features:

   A. **CERTIFIED PRODUCT:** Specified Technologies, Inc., Intumescent Wrap Strip; SpecSeal® Window Wall Gasket

      INTUMESCENT GASKET: Nominal 1/8 in. (3mm) thick and 8 in. (203mm) wide intumescent gasket is positioned so that the gasket is doubled over and the leading edge of the folded gasket does not extend past the edge of the slab. The folded intumescent gasket is secured to the concrete floor assembly (Item 1) with nominal 1-1/4 in. long (32mm), 3/16 in. (5mm) diameter concrete screws and fender washers spaced 12 in. (305mm) OC between the embeds (Item 1A) and 1 in. (25 mm) offsets from the ends of each embed. Alternatively, the intumescent gasket can be applied to the underside of the stack joint anchor head transom (Item 2B-ii) above the concrete floor assembly, in the same folded configuration, with self-tapping screws and fender washers on max. 12 in. centers. At splices, tightly butt seams of adjacent gasket sections. Install a 2-inch (51 mm) by 8-inch (203 mm) gasket strip over the seam, securing through all layers with nominal 1-1/4-inch long (32 mm), 3/16-inch (5 mm) diameter concrete screws and fender washers, spaced 3/4 inch (19 mm) on each side of

the seam. Where required at the mounting attachment (Item 2A), cut a maximum 2-inch (51 mm) slot in the gasket to allow the threaded stud access to the embed (Item 1A).

B. **CLOSED-CELL BACKER ROD** – Install closed cell backer rod into the gap space to completely fill the void height on the interior side of the wall (required), and exterior side of the wall (optional), both above and below the concrete floor assembly (Item 1). Recess the backer rod 1/4 inch to accommodate the weather seal sealant (Item 3C) when applied, and Interior Fire Seal (Item 3D).

C. **EXTERIOR WEATHER SEAL** - (Optional, for weather resistant purposes) – For weather resistance, apply exterior-grade 100% silicone sealant over the closed-cell backer rod (Item 3B) or the rounded outer edge of the window wall gasket (Item 3A) above the floor and/or backer rod below the floor (Item 1). Ensure the sealant is flush with the front edge of the concrete floor assembly and tool it with a concave surface facing the exterior.

D. **CERTIFIED PRODUCT:** Specified Technologies, Inc., Sealant; SpecSeal® SIL300 Silicone Sealant

INTERIOR FIRE SEAL - Install silicone sealant over the closed cell backer rod (Item 3B) to a min 1/4 in. (6 mm) depth, so that the sealant is flush with the interior of the wall framing.

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.