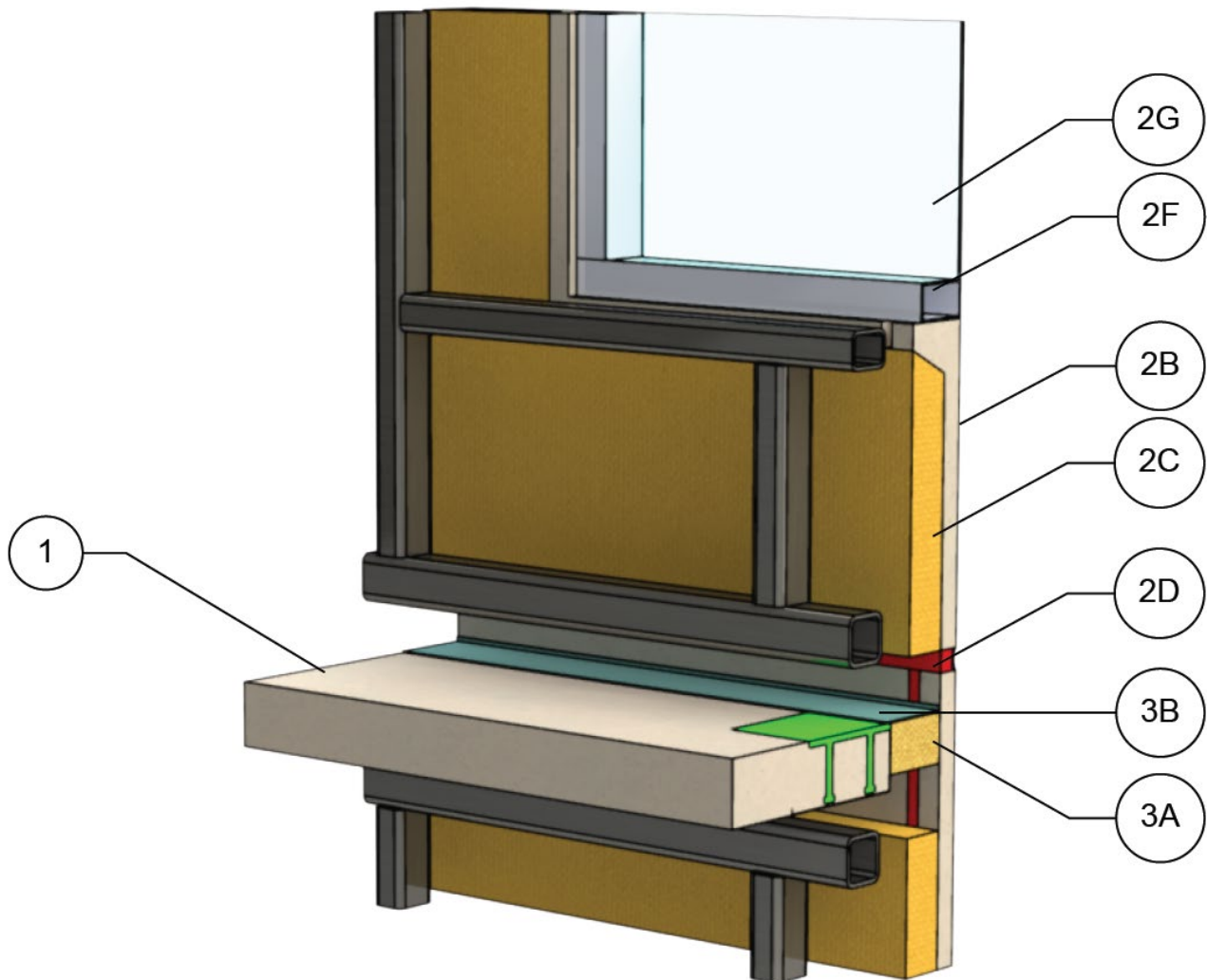


**Firewise Consultants LLC
Design No. FWC/BPF 120-03
Perimeter Fire Barriers
Precast Wall Assembly
ASTM E2307
F-Rating: 2 hour
T-Rating: 2 hour
UL 2079 (Air Leakage)
L-Rating <1 SCFM/LF**





1. **CONCRETE FLOOR ASSEMBLY:** Minimum 2-hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100-150 pcf, with a min. thickness of 5-1/4 in. at the joint face. The concrete floor assembly may be constructed with an optional min. 20 GA steel form attached to the joint face.

When necessary for tube steel framing (Item 2F), a steel embed plate of up to 10-in. wide x 16-in. long x 1/2-in. thick can be cast into the concrete such that the top of plate is level with the top of slab. The steel form shall be notched to accommodate the embed plate where necessary.

2. **CURTAIN WALL ASSEMBLY:** Incorporate the following construction features:
 - A. **MOUNTING ATTACHMENT (Not shown)** – Install mounting attachments per the curtain wall manufacturer's instructions. Mounting attachments may be located at the top or bottom of the concrete floor assembly (Item 1), but shall not penetrate the perimeter joint protection (Item 3).
 - B. **PRECAST CONCRETE PANELS** – Use min. 2 in. thick, Composite Architectural Precast Panels (CAPP) panels made from either lightweight or normal weight concrete with a density of 100 to 150 pcf, framed with light gauge tube steel CAPP frame system. Tube steel welds shall not fully enclose the tube steel.
 - C. **SPRAY FOAM INSULATION (Optional)** – Use nom. 2.0 pcf, Huntsman Building Solutions Heatlok HFO Pro closed-cell spray foam insulation bearing the Intertek Mark. Alternatively, Dupont Froth-Pak, nom. 1.75 pcf, closed-cell, spray foam insulation may be used. The spray foam insulation can be

installed on the interior face of the precast concrete panels (Item 2B). The spray foam insulation is only applied above and below the concrete floor assembly (Item 1). The spray foam insulation is not applied at the floorlines and stops minimum 4 inches below the bottom of the concrete floor assembly (Item 1) and a minimum of 4 inches above the top of the concrete floor assembly. The spray foam insulation shall be installed at a nominal 2-in. thickness.

- D. **PRECAST PANEL JOINTS** – The precast concrete panels may have horizontal and vertical joints between panels. Horizontal joints to be a max. 1-3/4 in. wide, with the bottom of the horizontal joints located at minimum flush to the top of concrete floor assembly (Item 1). Vertical joints to be a max. 1 in. wide and may be continuous through the perimeter fire barrier joint system. The joints shall be filled with Willseal 600 foam joint seal or backer rod appropriately sized for the joint and installed according to the manufacturer's instructions. The Willseal 600 or backer rod must be recessed a max. 1/2 in. into the panel joint. Install DOW 790 Sealant over the Willseal 600 or backer rod and tool to be slightly recessed.
- E. **FURRED WALL (Not Shown)** - A furred wall shall be installed on the interior side of the curtain wall assembly (Item 1). The perimeter joint (Item 3) shall be enclosed by the furred wall with a minimum of 6 inches from the edge of the joint face of the concrete floor assembly (item 1) and the interior face of the furred wall. Frame the furred wall with minimum 2-1/2 in. furred steel studs spaced maximum of 24-in. on center (oc). The wall shall be constructed minimum 8 ft height, or to window sill, or to



ceiling height. The furred wall may be stand alone or attached to the precast concrete panels. On the interior side of the stud framing, install min. one layer of min. 5/8 in. thick, Type X gypsum wallboard, complying with ASTM C1396. A maximum 5/8 in. gap from the bottom of the gypsum wallboard edge to the top of the concrete floor assembly is allowed. No filling material is necessary.

- F. WINDOW FRAMING (Optional) – When installing windows, use minimum 0.125-in. thick aluminum mullions and transoms.
- G. VISION GLASS PANELS (Optional) – Glass panels shall be sized and installed in accordance with curtain wall system manufacturer's instructions. Use a minimum 1/4 in. thick, clear, heat strengthened (HS) or tempered glass. At locations above the floorline, install the sill of the glass panels a minimum of 18 in. above the top of the concrete floor assembly (item 1). At locations below the floorline, install the header of the vision glass panels a minimum of 11-1/2 in. below the concrete floor assembly.
- H. EXTERIOR CURTAIN WALL METAL PANELS (Optional, Not Shown)– Install a minimum 0.04 in. thick aluminum metal panel with a maximum 2-1/2-in. deep air cavity between the interior of the metal panel and the exterior of the precast concrete panel (Item 2B).

3. **PERIMETER JOINT PROTECTION:** The perimeter joint (linear opening) shall not exceed 6-1/4-in. nominal joint width (joint width at installation) measured from the face of the concrete floor assembly (Item 1) to the interior face of precast concrete panel (item 2B). The perimeter joint

shall be enclosed by the furred wall (Item 2E) with a minimum of 6 inches from the edge of the joint face of the concrete floor assembly (item 1) and the interior face of the furred wall. The perimeter joint treatment shall incorporate the following construction features:

- A. **PACKING MATERIAL** - Use only mineral wool bearing an Intertek Certified Label and meeting the following minimum requirements:

Use a min. 4 in. thick, 4 pcf density, mineral wool batt insulation cut to size in order to achieve a minimum 33% compression between the interior face of the precast concrete panel (Item 2B) and the exterior face of the concrete floor assembly (Item 1).

- B. **CERTIFIED PRODUCT:** Specified Technologies, Inc., Joint Sealant Spray; SpecSeal® AS200 Elastomeric Firestop Spray

FILL, VOID, OR CAVITY MATERIAL – Apply a min. wet film thickness of 1/8 in. over the packing material (Item 3A). Ensure to overlap the spray a minimum of 1/2 in. onto the top of the concrete floor assembly and onto the interior face of the precast concrete panel (Item 2B), the overlap spray may be directly onto the precast panel interior or over the interior of the horizontal joint fill material (see item 2D) depending on the location of the horizontal joint.

If the spraying process is stopped and the applied liquid spray material cures to an elastomeric film before the process is restarted, then overlap the edge of the cured spray material at least 1/8 in. with the liquid spray material.



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.