

System No. CW-D-2076

F Rating - 2 Hr

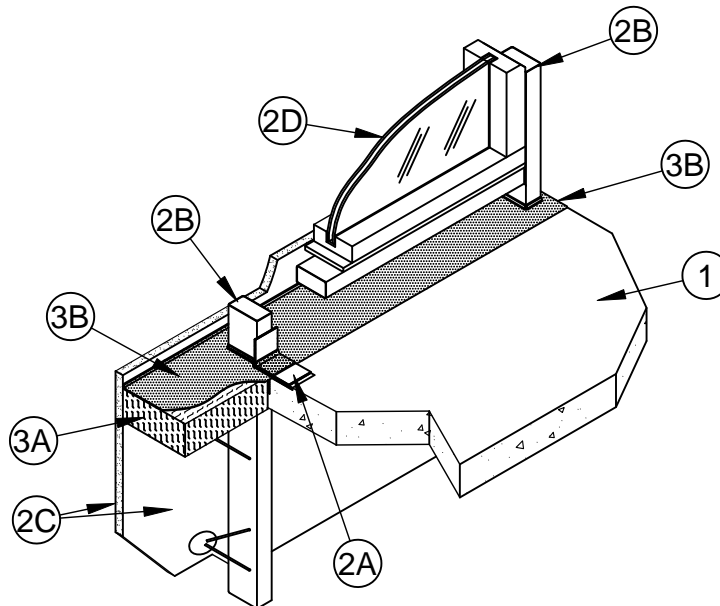
T Rating - 0 Hr

Linear Opening Width - 10 In. Max

L Rating At Ambient - Less Than 1 CFM/Lin Ft

L Rating At 400°F - Less Than 1 CFM/Lin Ft

Class II or III Movement Capabilities - 5% Vertical Shear



- 1. Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete. Perimeter of floor assembly to be provided with min 3 by 3 by 1/4 in. (76 by 76 by 6 mm) thick cast-in-place structural steel angle for weld-attachment of mounting angles (Item 2A).
- 2. Curtain Wall Assembly** - The curtain wall assembly shall incorporate the following construction features:
 - A. Mounting Anchors** - Panels provided with steel dead load anchors welded to steel framing for attachment to the cast-in place structural steel angle at edge of floor assembly (Item 1), spandrel beams, or columns. Panels also provided with steel lateral anchors and braces as required.
 - B. Steel Framing** - Steel framing shall consist of either tubular steel framing members or C-shaped steel studs. Framing member thickness shall be min 0.059 in. (1.5 mm). When tubular steel framing is used, the minimum width of the framing member shall be 2 by 4 in. (51 by 102 mm). When C-shaped studs are used, the steel studs shall be min 3-1/2 in. (89 mm) wide by 1-1/4 in. (31 mm) deep with 5/16 in. (8 mm) wide stiffening flanges and shall be assembled using runner channels formed from min 0.059 in. (1.5 mm) thick galv steel. Studs spaced max 24 in. (610 mm) OC and welded, bolted or screwed to mounting anchors (Item 2A) at each floor level. Interior face of steel framing to be max 2-1/2 in. (64 mm) from edge of floor assembly.
 - C. Glass Fiber Reinforced Concrete (GFRC) Panels** - Min 3/4 in. (19 mm) thick glass fiber reinforced concrete (GFRC) panels. GFRC panels affixed to steel framing (Item 2B) by means of flex anchors consisting of nom 1/4 in. (6 mm) steel rods. One end of steel rod shall be welded to the steel framing (Item 2B). Other end of steel rod embedded into GFRC panel bonding pad consisting of built up GFRC. The minimum length of the bonding pad is 3 in. (76 mm). Interior surface of GFRC panel shall be max 10 in. (254 mm) from edge of slab.
 - D. Framed Window** - Metal-framed window with nom 1 in. (25 mm) thick (double pane) transparent heat-strengthened or tempered glass panels. Sill of window to be min 6 in. (152 mm) above top of floor slab. Vertical separation between window punch-outs to be min 36 in. (914 mm). Top of window to be min 22-1/2 in. (572 mm) below bottom of floor slab.



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3. **Safing System** - Max separation between edge of floor slab and GFRC panel (at time of installation) is 10 in. (254 mm). The safing system is designed to accommodate vertical shear movement up to a max of 5 percent of its installed width. The safing system shall incorporate the following construction features:

A. **Forming Material*** - Nom 4 pcf (64 kg/m³) density mineral wool batt insulation. Batt sections to be cut to a min width of 4 in. (102 mm) and stacked to a thickness which is 25 percent greater than the width of linear gap between the GFRC panel and the edge of the concrete floor to attain a min 20 percent compression in the thickness direction when installed. The forming material is compressed and inserted cut-edge-first into linear gap between edge of floor slab and GFRC panel such that its top surface is flush with the top surface of the floor assembly. Additional pieces of mineral wool batt to be stuffed inside the channel of each steel stud throughout the thickness of the forming material.

ROCKWOOL MALAYSIA SDN BHD - SAFE

ROXUL INC - SAFE

B. **Fill, Void or Cavity Material* - Spray** - Min 1/8 in. (3.2 mm) wet thickness (min 1/16 in. or 1.6 mm dry thickness) of fill material spray-applied over top of forming material and lapping min 1/2 in. (13 mm) onto the top surface of the floor and onto the GFRC panel and steel framing members (Item 2C and 2B). When SpecSeal Fast Tack Spray is used, wet and dry thickness of spray is min 5/64 in. (2 mm).

SPECIFIED TECHNOLOGIES INC - SpecSeal AS200 Elastomeric Spray or SpecSeal Fast Tack Spray

4. **Joint Treatment** - (Not Shown) - Where vertical edges of adjacent GFRC panels meet, the max separation between adjacent GFRC panels (at time of installation) is 1 in. (25 mm). The vertical edges of the GFRC panels shall be provided with min 1-3/4 in. (44 mm) deep returns. The gap between the vertical edges of the GFRC panels shall be sealed as follows:

A. **Forming Material*** - Min 4 pcf (64 kg/m³) mineral wool batt insulation installed in joint opening as a permanent form. Min 1 1/2 in. (38 mm) thickness compressed and installed edge-first into joint opening, parallel with joint direction, such that batt sections are compressed min 33 percent in thickness and such that the compressed batt sections are recessed from both surfaces of the GFRC panel edge returns as required to accommodate the required thickness of fill material. Adjoining lengths of batt to be tightly butted with butted seams spaced min 16 in. (406 mm) apart along the length of the joint.

See **Forming Materials** (XHKU) category in the Fire Resistance Directory for names of manufacturers. Any UL Classified forming material meeting the above specifications may be used.

B. **Caulking and Sealants* - Exterior Sealant** - Exterior grade sealant applied to seal exterior side of GFRC panel joints.

See **Caulking and Sealants** (BLIS) category in the Building Materials Directory for names of manufacturers. Any UL Classified sealant meeting the above specifications may be used.

C. **Fill, Void or Cavity Material* - Interior Sealant** - Min 1/2 in. (13 mm) thickness of fill material applied within the joint on interior of wall, flush with wall surface.

SPECIFIED TECHNOLOGIES INC - SpecSeal ES Sealant or SpecSeal Series SIL 300 Silicone Sealant. SpecSeal ES Sealant shall be used when SpecSeal AS200 Elastomeric Spray is used in safing system. SpecSeal Series SIL 300 Silicone Sealant shall be used when SpecSeal Fast Tack Spray is used in safing system.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



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