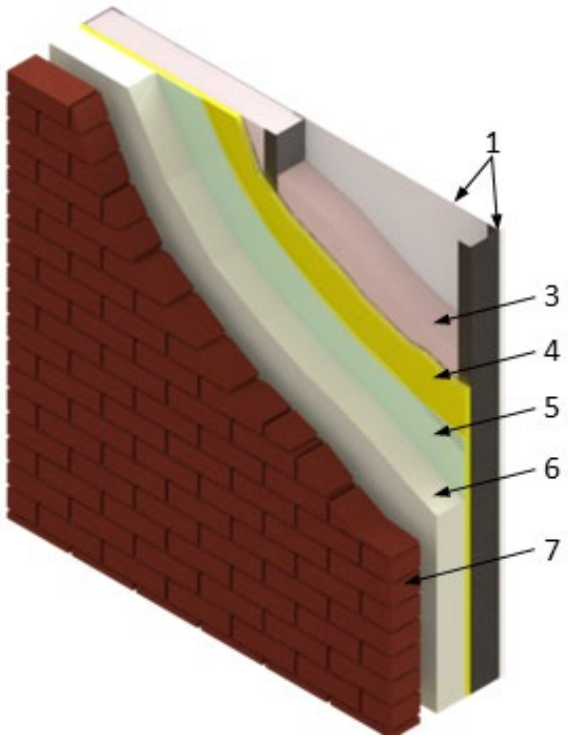
Johns Manville Corporation
Design No. JMC/FBI 30-04
Exterior Wall Assembly
AP™ Foil Faced Foam Sheathing and CI Max®
NFPA 285
Meets Conditions of Acceptance



1. BASE WALL ASSEMBLY: Use either 1.1, 1.2, or 1.3:

1.1. CONCRETE WALL

1.2. CONCRETE MASONRY WALL

1.3. One layer of 5/8 in. thick Type X gypsum wallboard installed on the interior side of min. 3-5/8 in. deep, min. 20 GA thick, steel studs spaced a max. of 24 in. on center (oc). Lateral bracing installed min. every 4 ft. vertically or as required. Min. 4 lbs/ft^3 mineral wool shall be friction fit between steel wall studs at each floorline. Height of mineral wool insulation shall be the same as the floor slab thickness.

Note: Fireblocking per 2021 IBC Section 718 and thermal barrier material requirements must be met for Base Wall Systems 1.1 and 1.2, as required by specific wall construction details when combustible concealed space is created on interior side of exterior wall assembly.

2. PERIMETER FIRE BARRIER SYSTEM: Perimeter fire barrier system complying with 2021 IBC Section 715.4 shall be installed, as applicable, to fill the void between the edge of the building floor slab and the interior surface of the exterior wall assembly.

3. **STUD CAVITY INSULATION:** Use any of the following:
   - None (for Base Wall Systems 1.1 and 1.2 only)
   - Fiberglass batt insulation (faced or unfaced)
   - Fiberglass spray-in insulation
   - Mineral wool insulation (faced or unfaced)
   - Sprayed cellulosic insulation complying with Section 720 of the IBC and ASTM C739

4. **EXTERIOR SHEATHING:** Use either of the following:
   - None (for Base Wall Systems 1.1 and 1.2)
   - 5/8 in. thick Type X exterior type gypsum sheathing complying with ASTM C1177 (for Base Wall System 1.3)

5. **WATER-RESISTIVE BARRIER:** Use any of the following:
   - None
   - GCP Perm-A-Barrier® VPS
   - Dupont Tyvek® Commercial Wrap®
   - Dupont Weathermate™ or Weathermate™ Plus
   - Kingspan Green Guard® Max Building Wrap

   Note: The WRB must have a peak heat release rate of less than 150 kW/m^2, a total heat release of less than 20 MJ/m^2, and an effective heat of combustion of less than 18 MJ/kg as determined in accordance with ASTM E1354, and have a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E84 or UL 723. The ASTM E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation, and at an incident radiant heat flux of 50 kW/m^2. All WRB materials to be installed in accordance with the manufacturer's installation instructions, the applicable ICC-ES evaluation reports, and the applicable Codes.

6. **EXTERIOR INSULATION:** Use either of the following:
   - **CERTIFIED PRODUCT:** Max. 3-1/2 in. thickness of Johns Manville AP™ Foil Faced Foam Sheathing. Installed between 3-1/2 in. horizontal, 18 GA steel Z-bars spaced nominally 29 in. oc. Joints and fasteners may be covered with max. 4 in. 3M All Weather Flashing Tape 8777.
   - **CERTIFIED PRODUCT:** Max. 3-1/2 in. thickness of Johns Manville CI Max® Foam Sheathing polyisocyanurate insulation. Installed between 3-1/2 in. horizontal Z-bars, spaced nominally 29 in. oc.

7. **EXTERIOR VENEER:** Use any of the following:

7.1. BRICK VENEER: (Shown) Standard nominal 4 in. thick, clay brick with standard brick veneer anchors installed a max. of 24 in. oc vertically on each stud. A max. 2 in. air gap between exterior insulation and brick.

7.2. STUCCO: Min. 3/4 in. thick, exterior cement plaster and metal lath. A secondary water-resistive barrier may be installed between the exterior insulation and the lath. The secondary water-resistive barrier must comply with the same requirements noted in Item 5 and shall not be full-coverage asphalt or butyl-based self-adhered membranes.

7.3. STONE VENEER: Min. 2 in. thick, Limestone or natural stone veneer, or min. 1-1/2 in. thick cast artificial stone veneer. Any standard non-open jointed installation technique can be used. A max. 2 in. air gap between exterior insulation and cladding.

7.4. TERRA COTTA CLADDING: Use any terracotta cladding system in which terracotta is min. 1-1/4 in. thick. Any standard non-open jointed installation technique can be used. A max. 2 in. air gap between exterior insulation and cladding.

7.5. PRECAST CONCRETE PANELS OR CONCRETE MASONRY UNIT (CMU): Min. 1-1/2 in. thick. Any standard non-open jointed installation technique can be used. A max. 2 in. air gap between exterior insulation and cladding.

7.6. AUTOCLAVED-AERATED CONCRETE (AAC) PANELS: AAC panels that have been successfully tested in accordance with NFPA 285 on a wall assembly incorporating a foam plastic insulation. A max. 2 in. air gap between exterior insulation and cladding.

7.7. THIN BRICK SYSTEM: Min. 3/4 in. thick clay thin brick system fully adhered with cementitious mortar (standard or polymer modified) to min. 1/2 in. thick cement backer board or exterior gypsum sheathing.

7.8. UNINSULATED FIBER CEMENT BOARD: Min. 1/4 in. thick fiber cement board qualified as noncombustible per ASTM E136 testing and has been successfully tested in accordance with NFPA 285 on a wall assembly incorporating a foam plastic insulation. A max. 2 in. air gap between exterior insulation and cladding.

7.9. STONE/ALUMINUM HONEYCOMB PANELS: Any composite panel which has been successfully tested in accordance with NFPA 285 on a wall assembly incorporating a foam plastic insulation. A max. 2 in. air gap between exterior insulation and cladding.

7.10. SOLID METAL PANELS: Min. 3mm thick steel, aluminum, or copper. Any standard non-open jointed installation technique can be used. A max. 2 in. air gap between exterior insulation and cladding.

8. OPENING HEADER, SILL, JAMB PROTECTION: 18 GA, 3-1/2 in. deep continuous "U" bar sheet steel covering the edge of the foam plastic insulation. Min. 26 GA sheet steel flashing drip edge attached to "U" bar via rivets 8 in. oc as shown in Figures 1, 2, and 3.

9. FLASHING OF WINDOW, DOOR AND OTHER EXTERIOR WALL PENETRATIONS: (Optional, Not Shown): Flash around window, door, and other exterior penetrations with limited amounts of max. 12 in. wide flashing tape (acrylic, asphalt, or butyl-based), or liquid-applied membrane material with or without fiber mesh reinforcement.

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.

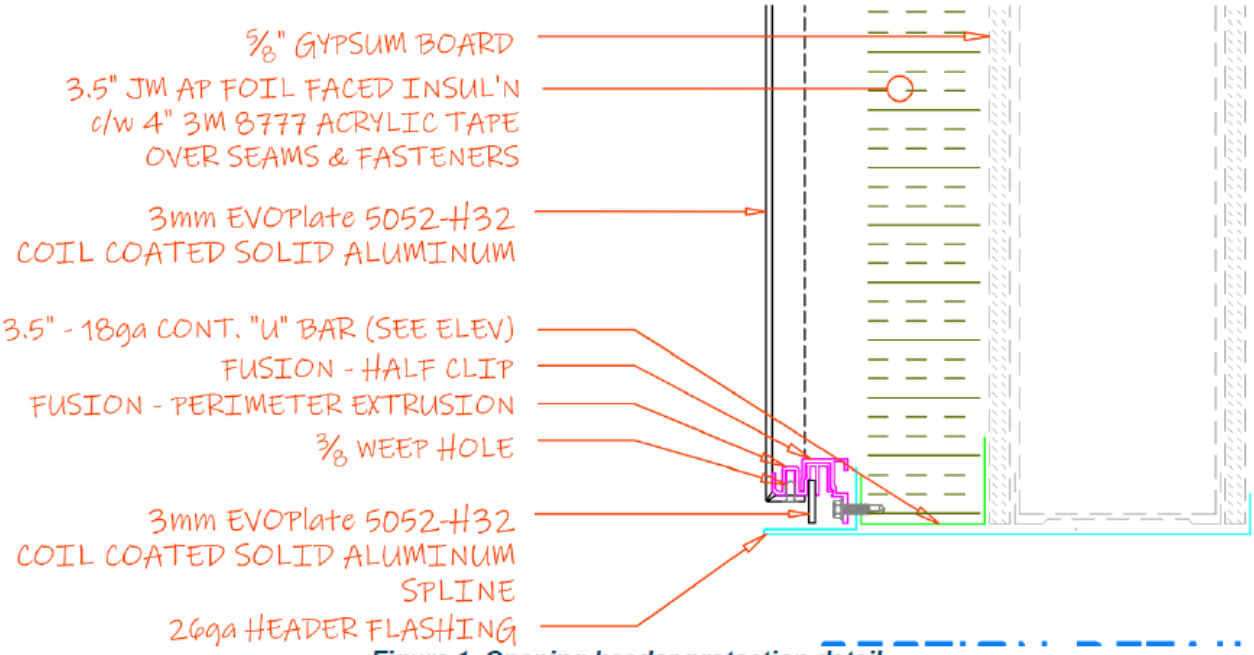


Figure 1. Opening header protection detail

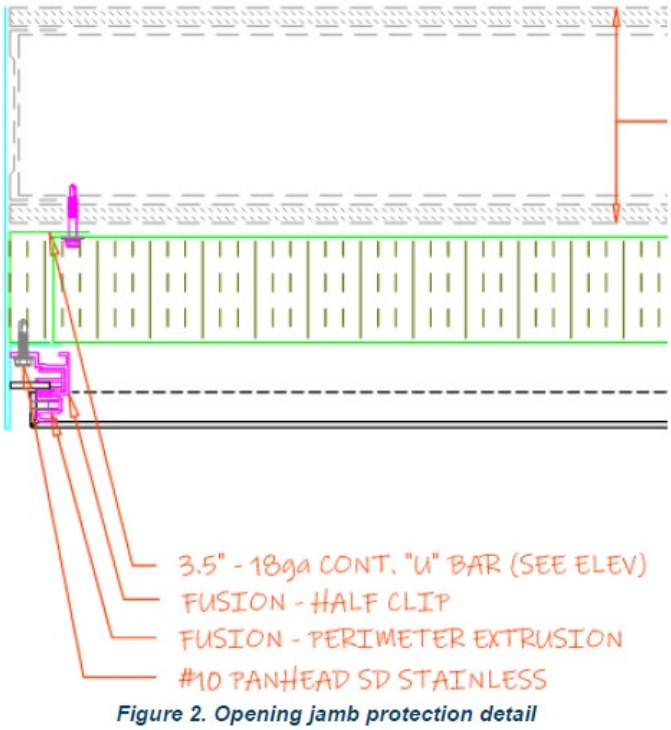


Figure 2. Opening jamb protection detail

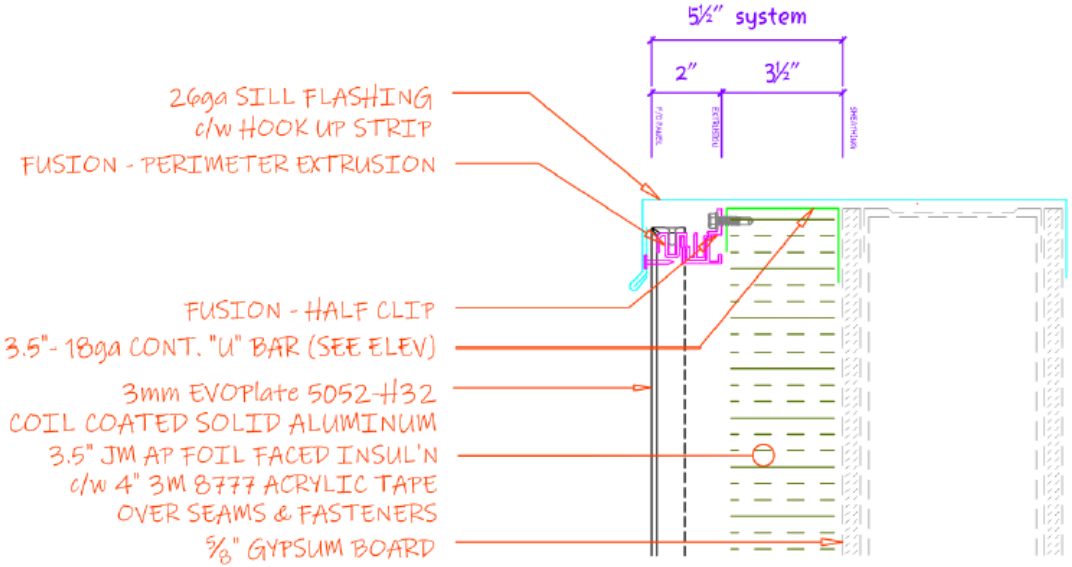


Figure 3. Opening sill protection detail