

**SECTION 072700**  
**SPRAY APPLIED AIR AND WATER BARRIER**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Air Barriers: Materials to stop passage of air through exterior walls, joints between exterior walls and roof, and joints around frames of openings in exterior walls.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Water-resistive barrier under exterior cladding.
- B. Section 072100 - Board and Batt Insulation: Vapor retarder installed in conjunction with batt insulation.
- C. Section 076200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.
- D. Section 079005 - Joint Sealers: Sealant materials and installation techniques.
- E. Section 092116 - Gypsum Board Assemblies: Water-resistive barrier under exterior cladding.

**1.03 DEFINITIONS**

- A. Air Barrier: Air-tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces.
- B. Water-Resistive Barrier: Water-shedding barrier made of material that is moisture-resistant, to the degree specified, intended to be installed to shed water.

**1.04 REFERENCE STANDARDS**

- A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- B. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- C. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.
- D. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies; 2024.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.
- C. Manufacturer's Installation Instructions: Indicate preparation.

**1.06 QUALITY ASSURANCE**

- A. Vapor Permeability (Perm): Measure in accordance with ASTM E96/E96M Procedure E.

**1.07 MOCK-UP**

- A. Install air barrier and water-resistive barrier materials in mock-ups as specified per project design criteria.

**1.08 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

**PART 2 PRODUCTS**

**2.01 AIR AND WATER BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)**

- A. Air and Water Barrier Coating: Cold-fluid-applied, vapor permeable membrane.

1. Material: Water-based acrylic - polymer, with VOC content less than 20g/L.
2. Dry Film Thickness: 40 mils (0.040 inch), minimum.
3. Membrane Air Permeance: 0.0004 cubic feet per square foot, maximum, when tested in accordance with ASTM E2178.
4. Air Barrier Assembly Air Permeance: 0.0008 cubic feet per square foot, maximum, when tested in accordance with ASTM E2357.
5. Water Vapor Permeance: 15 perms, minimum, when tested in accordance with ASTM E96/E96M.
6. Products:
  - a. For E.I.F.S installation, product to be determined by E.I.F.S manufacturer to meet the system warranty.
  - b. Grace Construction; Product: Perm-A-Barrier VP20: [www.na.graceconstruction.com](http://www.na.graceconstruction.com).
  - c. Henry Company; Product: Air-Bloc 31: [www.henry.com](http://www.henry.com).
  - d. Tremco Global Sealants; Product: ExoAir 222: [www.tremcosealants.com](http://www.tremcosealants.com).
  - e. Substitutions: 016000 - Product Requirements.

## **2.02 SEALANTS**

- A. Butyl Sealant: as specified in Section 079005.
- B. Sealant Backers: As specified in Section 079005.
- C. Primers, Cleaners, and Other Sealant Materials: As recommended by sealant manufacturer, appropriate to application, and compatible with adjacent materials.

## **2.03 ADHESIVES**

- A. Mastic Adhesive : Compatible with sheet seal and substrate, thick mastic of uniform knife grade consistency .

## **2.04 ACCESSORIES**

- A. Self-Adhesive Sheet Flashing: ASTM D1970/D1970M.
- B. Thinners and Cleaners: As recommended by material manufacturer.

# **PART 3 EXECUTION**

## **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready to accept the work of this section.

## **3.02 PREPARATION**

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

## **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's instructions.
- B. Coatings:
  1. Prepare substrate in manner recommended by coating manufacturer; fill and tape joints in substrate and between dissimilar materials.
  2. Sprayed Coating: Install to thickness recommended by manufacturer.
  3. Use self-adhesive sheet flashing to seal to adjacent construction and to bridge joints.
- C. Openings and Penetrations in Exterior Weather Barriers:
  1. Install self-adhesive flashing over sills, covering entire sill frame member, extending at least 5 inches onto weather barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
  2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with self-adhesive flashing at least 4 inches wide; do not seal sill flange.

3. At openings to be filled with non-flanged frames, seal weather barrier to all sides of opening framing, using self-adhesive flashing at least 9 inches wide, covering entire depth of framing.
  4. At head of openings, install self-adhesive flashing under weather barrier extending at least 2 inches beyond face of jambs; seal weather barrier to flashing.
  5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
  6. Service and Other Penetrations: Form self-adhesive flashing around penetrating item and seal to weather barrier surface.
- D. Install air and water seal materials and assemblies in conjunction with materials described in other sections to provide continuous sealed barrier in the exterior enclosure of the building.
  - E. Over exterior surface of gypsum sheathing install sheet seal with full bed of adhesive. Seal laps with sealant.
  - F. At window openings install sheet seal between frame and adjacent wall seal material and attach with tape. Seal laps with sealant. Position lap seal over firm bearing.
  - G. Apply sealants and adhesives within recommended application temperature ranges. Consult manufacturer if temperature is out of this range.

#### **3.04 FIELD QUALITY CONTROL**

- A. Do not cover installed weather barriers until required inspections have been completed.
- B. Obtain approval of installation procedures by the weather barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.
- C. Take digital photographs of each portion of the installation prior to covering up.

#### **3.05 PROTECTION**

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.
- B. Do not leave paper- or felt-based barriers exposed to weather for longer than one week.

**END OF SECTION**