

The following standard specification is intended to be edited according to the specifics of the project. Brackets [ ] and areas shaded in gray [e.g. format] indicate requirements that are optional depending upon the type of system being provided or per instructions associated with the [ ] and project requirements. Consult with University's Representative and campus stakeholders.

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## SECTION 07 25 00 WATER RESISTIVE BARRIER SYSTEM

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the water-resistive barrier system concealed under exterior wall claddings that are protecting weather-exposed surfaces including the following:
  - 1. Water-resistive barriers, moisture-vapor permeable and impermeable.
  - 2. Self-adhered membrane.
  - 3. Self-adhered flashing.
  - 4. Accessories.

#### 1.2 RELATED SECTIONS

- A. Section 01 31 10 Project Meetings
- B. Section 01 43 00 Quality Assurance
- C. Section 01 43 39 Mock-ups
- D. Section 01 60 00 Product Requirements
- E. Section 06 16 43 Gypsum Sheathing
- F. Section xx xx xx Sheet Metal Flashing and Trim
- G. Section 09 22 36.23 Cement Plaster Lathing and Lath Accessories
- H. Section 09 24 00 Portland Cement Plastering

#### 1.3 SUBMITTALS

- A. Installer qualifications and experience.
- B. Product Data: For each product specified.
- C. Installation: Provide manufacturer's installation instructions regarding intended application means and methods of complying with specified requirements to achieve a watertight installation. If using other methods of application, certify that products and applications comply with specified requirements.

Note to Specifier: Coordinate LEED submittal requirements with the project's LEED goals and rating system.

#### D. LEED Submittals:

- 1. Product Data: For Credit EQ 4.1: For adhesives and sealants, including printed statement of VOC content.
- 2. Product Data: For Credit MR 4.1 and MR 4.2: Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.

- E. Samples: For each product specified, submit four, 12 inch long samples.
- F. Mock-ups: Representative materials and assemblies occurring at exterior walls, including conditions at field of wall, perimeters, soffits, intersections with heads/jambes, sills of windows. Doors and penetrations.

#### 1.4 QUALITY ASSURANCE

- A. Comply with CBC Section 1404.2.
- B. Installer shall have 5 years of documented previous experience on at least 5 similar scope projects, using the specified or generically comparable materials.
- C. Perform Work in conformance with product manufacturer's written instructions.
- D. Follow recommendations of ASTM E2112 *Standard Practice for Installation of Exterior Windows and Doors*, and ASTM E 2266 *Standard Guide for Design and Construction of Low-Rise Frame Building Wall Systems to Resist Water Intrusion* for general guidance in assuring a watertight building enclosure.
- E. Mock-ups: Provide products, assemblies, and related materials for the composite mock-ups specified in **Section 01 43 39 Mock-ups**. Test completed mock-up assemblies following CBC 1403.2 to the code prescribed minimum pressure or building design pressure, whichever is greater.
- F. Pre-installation Conference: Conduct conference at Project site in accordance with the requirements of Section 01 31 10 Project Meetings and the following:
  - 1. Notify participants including University's Representative, Contractor, subcontractors and University's waterproofing consultant at least 7 calendar days before conducting meeting.
  - 2. Review materials to be used and procedures to be followed in performing the Work.
  - 3. Review in detail job conditions, schedule, construction sequence, and quality of completed installation.
  - 4. Review installation of lathing, lath accessories, with special attention to detailing of control joints and expansion joints and acceptable repair techniques for shiners and abandoned fasteners.
  - 5. Record discussions of conference and any conflict, incompatibility, or inadequacy. Furnish a copy of record to each participant.

**Note to Specifier: Coordinate Environmental Quality Assurance with LEED submittal requirements and project's LEED goals and rating system.**

#### 1.5 ENVIRONMENTAL QUALITY ASSURANCE

- A. Provide water-resistive barrier with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 10-percent of cost of materials used for the Project. For Credit MR 4.1 and MR 4.2 – Recycled Content

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.
- B. Refer to Section 01 60 00 Product Requirements.

#### 1.7 COORDINATION

- A. Mock-ups: Be responsible for timely arrangement for and provision of products, assemblies, and related materials for composite mock-ups specified in **Section 01 43 39 Mock-ups**. Coordinate work of other applicable Sections with Work of this Section.

## 1.8 WARRANTY

- A. Warrant sheathing paper to be free from defects in materials and workmanship for a period of 10-years from date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the University may have against the Contractor under the Contract Documents.

## PART 2 - PRODUCTS

### 2.1 WATER-RESISTIVE BARRIER (Water-Vapor Permeable)

- A. 2-layer minimum installation. The water resistance of each layer shall be not less than 1 hour per ASTM D779 and water-vapor transmission shall be not less than 75 g/sq. m. x 24 hr. per ASTM E96

**Note to Specifier: select one of the following options.**

- Option 1:** 2 layers Building Paper: Federal Specification UUB-790a, Grade D, 60 minute (water-vapor-permeable, kraft building paper). Fortifiber Corp.'s "Super Jumbo Tex," asphalt-saturated kraft, permeable building paper, or equal.
- Option 2:** 1 layer (inner) WrapShield SA, self-adhered vapor permeable sheet, with manufacturers prefabricated corners, tapes and accessories, self-adhered, Vaproshield LLC or equal, plus 1 layer (outer) of Option 1 Building Paper product.

### 2.2 WATER-RESISTIVE BARRIER (Water-Vapor Impermeable)

**Note to Specifier: Water Vapor Impermeable WRB's do not allow the wall to transmit water vapor from interior sources and should only be specified when a water vapor transmission analysis (WUFI) is performed to verify that the wall assembly and building ventilation rates are sufficient to prevent moisture vapor entrapment in the wall assembly.**

- A. 2-layer minimum installation.

**Note to Specifier: select one of the following options.**

- Option 1:** 1 layer (inner) Perm A Barrier Wall Membrane, Grace Construction Products, or equal, plus 1 layer (outer) of Option 1 Building Paper product.
- Option 2:** Blueskin SA, Henrys, or equal, plus 1 layer (outer) of Option 1 Building Paper product

### 2.3 SELF-ADHERED FLASHING

- A. Self-adhered flashing (SAF1): SBS modified rubberized asphalt adhesive, 40-mil thickness, HDPE carrier sheet. Standard material.
- Vycor V-40, 36 mil. of rubberized asphalt integrally bonded to 4 mil 0.1mm (.004 inch), high density cross laminated polyethylene film. Grace Construction Products or equal.
- B. Self-adhered flashing (SAF2): SBS modified rubberized asphalt adhesive, 25-mil thickness, aluminum surfaced, HDPE carrier sheet. For use where sealant will be adhered, such as around window openings.
- Vycor Aluminum Flashing, rubberized asphalt integrally bonded to aluminum surfaced HDPE high density cross laminated polyethylene film. Grace Construction Products or equal
- C. Self-adhered flashing (SAF3): Butyl adhesive, 30-mil thickness, HDPE carrier sheet. For use at high heat locations such as under sheet metal flashings exposed to the sun.
- Ultra Roofing Underlayment, butyl adhesive, Grace Construction Products or equal.
  - Use manufacturer-approved butyl-based SAF when installing Wrapshield SA.

## 2.4 ACCESSORIES

- A. Primer for use over fiberglass-mat faced wall sheathings: WB primer, Grace Construction Products or equal.
- B. Sealant: Sealant compatible with adjacent self-adhered flashings, membranes and components:
  - 1. For use with HDPE carrier sheet self-adhered membranes and flashings. One part, neutral cure silicone sealant. Dow 758, Dow Corning or equal.
  - 2. For use with Henrys Blueskin, One-part, low-odor, moisture cure or equal. BES 925 sealant, or equal.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Review definition of weather-exposed surfaces from CBC Chapter 2502: Weather-Exposed Surfaces. Surfaces of walls, ceilings, floors, roofs, soffits and similar surfaces exposed to the weather except the following:
  - 1. Ceilings and roof soffits enclosed by walls, fascia, bulkheads or beams that extend a minimum of 12 inches below such ceiling or roof soffits.
  - 2. Walls or portions of walls beneath an unenclosed roof area, where located a horizontal distance from an open exterior opening equal to at least twice the height of the opening.
  - 3. Ceiling and roof soffits located a minimum horizontal distance of 10 feet from the outer edges of the ceiling or roof soffits.
- B. Examine areas and substrates, with installer present, including wall assemblies, penetrations and other conditions affecting performance, and ceilings and soffits. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Inspect wall surfaces for plumb and planarity. Verify planarity of wall surface is within 1/4 inch over 10 feet or less, and within 1/8th inch over 4 feet or less. Reject non-conforming Work.
- D. Surfaces to receive water-resistive barrier shall be free from projecting nails, wires, or other conditions that might damage paper.
- E. Surfaces to be covered shall be dry, and shall have dried in fair weather not less than 3-days following wetting by rain.
- F. Inspect gypsum wall sheathing installation. Verify continuous sheathing corners at wall openings, with no panel butt edges aligned at corners. Verify no excessive gaps occur between panel edges and panels fastening.

### 3.2 INSTALLING WATER-RESISTIVE BARRIER SYSTEM - GENERAL

- A. Requirements for the water-resistive barrier system apply to exterior weather-exposed surfaces as defined. Non-vertical, weather-exposed building enclosure surfaces require specific materials, detailing and installation workmanship.
- B. Apply 2 layers of water-resistive barrier under all weather-exposed wall cladding materials. Secure to substrate to maintain in place until covered by other materials. When complete, water-resistive barrier shall be reasonably flat, without excessive warps and bulges, and free from holes, cuts, tears, and other damage and defects.
- C. Apply dry-lapped water-resistive barrier membranes horizontally, in accordance with manufacturer's written instructions, with 4 inch minimum horizontal overlap and 6 inch minimum (vertical) end laps, to vertical exterior wall surfaces only. At adjacent sheets courses, offset joints not less than 48 inches. At alternate sheet courses, offset joints not less than 24 inches.

- D. Overlap water-resistive barrier system components over vertical flanges of sheet metal drainage flashings, horizontal expansion joints, door and window sill pan and head flashings, weep screeds, drainable cement plaster lath accessories, and all other appurtenances required for a complete, integrated drainable system.
- E. Seal frames and perimeters of wall-opening assemblies such as window, door and louver assemblies, and wall penetrations such as pipes and conduits, to the water-resistive barrier system for a continuous, watertight condition to protect the building and wall assemblies from bulk water intrusion.

### 3.3 INSTALLING SELF-ADHERED MEMBRANE AND SELF-ADHERED FLASHING

#### A. General:

1. Follow manufactures written instructions, provide compatible primers to substrates where required.
2. Conceal water-resistive barrier system components under exterior wall claddings and finishes, do not leave them exposed to ultraviolet light.
3. Provide self-adhered flashing under all sheet metal flashings, and install in a continuous watertight manner with the building water-resistant barrier membrane.
4. Provide high heat-resistant type self-adhered flashings and self-adhered membrane under sheet metal flashings exposed to high heat conditions such as under sheet metal copings exposed to the sun.
5. Apply self-adhered membranes and flashings, following manufacturer's written instructions, with 3 inch minimum overlaps.
6. Handroll self-adhered membranes and flashings with a rolling tool and use required pressure to eliminate blisters and wrinkles, and to ensure well-adhered, watertight laps.
7. At cement plaster wall claddings, provide one layer of building paper as an isolator sheet over self-adhered flashings and membranes, to prevent cement plaster adhesion and promote drainage.
8. Sequence the installation of horizontal self-adhered flashings and membranes to avoid reverse laps and to promote drainage.

#### B. At dry-lapped water-resistive barriers:

1. Provide 12 inch wide minimum self-adhered flashing centered at internal and external wall corners, centered dimpled under wall expansion joints, and over window head flashing flanges.
2. Provide 6 inch wide minimum self-adhered flashing centered under cement plaster control joints, either under or over the water-resistive barrier membrane, and over horizontal sheet metal drainage flashing flanges such as weep screeds, drip screeds and 2-piece drainable expansion joints.

### 3.4 CLEANING AND PROTECTION

- A. Thoroughly inspect and repair defects in water-resistive barrier system components, from spinners and shiners (removed or abandoned fasteners that miss supports), unsealed holes from removed fasteners, scaffold tie-backs, tears, delaminations,, and any other condition that would allow bulk water intrusion beyond the water-resistive barrier system into the building, before concealment with wall claddings.

END OF SECTION 07 25 00