

**SPEC WRITERS NOTE:** This specification includes materials and installation procedures for **SlopeShield SA®** Self-Adhered Water-Resistive Vapor Permeable Roof Underlayment; a fully adhered water-resistive sheet underlayment membrane used as a secondary rain barrier under sloped roofing systems. With a vapor permeance rating of 51.74 perms (359.5 g/m<sup>2</sup> • 24hrs) **SlopeShield SA®** Self-Adhered Water-Resistive Vapor Permeable Roof Underlayment stops water intrusion and allows the roof assembly to breathe or 'dry-out' as necessary to meet the conditions of seasonal changes for each climate zone. This guide specification should be adapted to suit the requirements of individual projects. It is prepared in CSI Master Format and should be included as a separate section under Division 7 - Thermal and Moisture Protection.

## **PART 1 - GENERAL**

### **1.01 GENERAL REQUIREMENTS**

- A. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

### **1.02 SYSTEM DESCRIPTION**

- A. Supply labor, materials and equipment for the installation of a fully adhered water-resistive vapor permeable roof underlayment membrane.
- B. Complete Work as shown on the Drawings and specified herein to bridge gaps and seal the water-resistive vapor permeable roof underlayment membrane against water intrusion.
- C. Install fully self-adhered water-resistive vapor permeable roof underlayment membrane, weather barrier flashing, lap seam tapes, metal flashings, ventilation strips, roof finish system complete with clips, metal valley flashings and accessories.

### **1.03 RELATED SECTIONS**

- A. Related Sections may include the following:
  - 1. Division 6: Rough Carpentry
  - 2. Division 7: Clay Tile Roofing Systems
  - 3. Division 7: Wood Shakes and Shingles Roofing Systems
  - 4. Division 7: Pre-Finished Metal Roofing Systems
  - 5. Division 13: Pre-Engineered Buildings for metal siding and roofing

### **1.04 REFERENCE STANDARDS**

- A. ASTM D5034 Standard Test Method for Breaking Load and Elongation of Textile Fabrics
- B. ASTM E398 – Standard Test Method for Water Vapor Transmission Rate of Sheet Materials Using Dynamic Relative Humidity Measurement
- C. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials. Meets Air Barrier Association of America (ABAA) requirements for “Adhesive Backed Commercial Building Wraps”.
- D. AC48 Acceptance Criteria for Roof Underlayments for use in severe climate areas
- E. AC207 Acceptance Criteria for Polypropylene Roof Underlayments
- F. ASTM D4869 – Test for Liquid Water Transmission to ASTM D4869
- G. ASTM D3462 – Standard Test Method for Fastener Pull-through Resistance

### 1.05 SUBMITTALS

- A. Submit manufacturer's current product data sheets, details and installation instructions for the water-resistive vapor permeable roof underlayment membrane components and accessories.
- B. Submit samples of the following:
  - 1. Manufacturer's sample 20 year warranty
  - 2. Self-adhered water-resistive vapor permeable roof underlayment sheet, minimum 8 by 10 inches (203 by 254 mm)
  - 3. Components, minimum 12-inch (305 mm) lengths
  - 4. Membrane flashings and lap seam tapes
  - 5. Clips and fastener accessories
  - 6. Sealants

### 1.06 QUALITY ASSURANCE

- A. Single Source: Fully self-adhered water-resistive vapor permeable roof underlayment membrane components and accessories must be obtained as a single-source membrane system to ensure total system compatibility and integrity.
- B. Manufacturer Qualifications
  - 1. Manufacturer of specified products listed in this Section to have minimum 10 years of continued experience in the manufacture and supply of water-resistive vapor permeable roof underlayment membrane products successfully installed in similar project applications.
  - 2. Manufacturer of specified products listed in this Section to have experienced in-house technical and field observation personal qualified to provide expert technical support.

### 1.07 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene [one] week prior to commencing Work of this section, under provisions of Section 01 31 19 – Project Meetings.
- B. Ensure all contractors responsible for creating a continuous plane of water tightness are present.

### 1.08 DELIVERY, STORAGE AND HANDLING

- A. Refer to current Product Installation Instructions at [www.vaproshield.com](http://www.vaproshield.com) for proper storage and handling.
- B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- C. Store roll materials on end in original packaging. Protect rolls from direct sunlight and inclement weather until ready for use.
- D. Wasted Management and Disposal
  - 1. Separate and recycle waste materials in accordance with Section [01355 - Waste Management and Disposal], and with the Waste Reduction Work Plan.

### 1.09 ALTERNATES

- A. Submit request for alternates in accordance with Section 01 25 00 – Substitution Procedures.
- B. Submit requests for alternates a minimum of ten (10) working days prior to bid date.
- C. Alternate submission to include:
  - 1. Evidence that alternate materials meet or exceed performance characteristics of

- specified product requirements including documentation from an approved independent testing laboratory certifying the minimum physical dimensions, tensile strength, fire burning characteristics, vapor permeance and air leakage rates of the fully self-adhered (not-spot applied adhesive) water-resistive vapor permeable air barrier membrane without VOC's or the aid of primers or surface conditioners.
2. Manufacturer's complete set of details for fully self-adhered water-resistive vapor permeable roof underlayment membrane system showing a continuous plane of water and air tightness over the building enclosure.
  3. Manufacturer of alternate materials has experienced in-house technical and field observation personal qualified to provide expert technical support.
- D. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to bid date shall not be permitted for use on this project.

**SPEC WRITERS NOTE:** SlopeShield SA will remain stable for up to 120 Days (4 months) of direct UV exposure. However, SlopeShield SA is not intended to be the primary liquid water hold out system or temporary roof covering to remain watertight when exposed to extreme weather conditions. Recommend to cover SlopeShield SA with permanent roof cladding as soon as practical.

#### 1.10 WARRANTY

- A. Provide manufacturer's standard material warranty in which manufacturer agrees to provide replacement material for fully self-adhered water-resistive vapor permeable roof underlayment sheets installed in accordance with manufacturer's instructions that fails due to material defects within 20 years from the date of purchase.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Primary fully self-adhered water-resistive vapor permeable roof underlayment membrane, components and accessories must be obtained as a single-source to ensure total system compatibility and integrity.
1. Self-adhered water-resistive vapor permeable roof underlayment membrane by VaproShield LLC., Gig Harbor, WA, Phone: (866) 731-7663, Email: [info@VaproShield.com](mailto:info@VaproShield.com), Website: [www.vaproshield.com](http://www.vaproshield.com).
- B. Fully self-adhered water-resistive vapor permeable roof underlayment (Basis of Design)
1. Primary fully self-adhered roof underlayment membrane shall be SlopeShield SA<sup>®</sup> Self-Adhered Water-Resistive Roof Underlayment by VaproShield, a zero VOC fully adhered vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having the following properties:
    - a. Color: Red with allowable UV exposure for 120 days (4 Months).
    - b. Adhesive: 100% coverage on back side of membrane (not spot applied), vapor permeable, with zero VOC's.
    - c. Air Leakage: <0.00002 cfm/ft<sup>2</sup> @ 1.57 psf (<0.0001 L/s·m<sup>2</sup> @ 75 Pa) when tested in accordance with ASTM E2178.
    - d. Water Vapor Permeance tested to ASTM E398: minimum of 51 perms (359 g/m<sup>2</sup> • 24hrs )

- e. Water Resistance tested (Ponding): AC48, 24 inches (610 mm) 48 hours, Pass, no leakage
- f. Tensile Strength tested to ASTM D5034: Pass, 88 lbf (391 N), machine direction; 83 lbf (369 N), cross-machine direction
- g. Application Temperature: Ambient temperature must be above 20 degrees F (minus 6.7 degree C).
- h. Physical Dimensions: 0.022 inches (0.56 mm) thick and inches (1.5 m) wide and 97.06 oz/ft<sup>2</sup> (257 g/m<sup>2</sup>).
- i. Liquid Water Transmission to ASTM D4869: Pass
- j. Fastener Pull-through Resistance: ASTM D3462 – Pass

C. WATER-RESISTIVE VAPOR PERMEABLE TRANSITION AND FLASHING MEMBRANE

- 1. Self-adhered underlayment flashing membrane shall be VaproFlashing SA™ by VaproShield, a zero VOC fully self-adhered vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having properties equal to the primary self-adhered water resistive underlayment membrane.
  - a. VaproFlashing SA™ Orange: 11-1/2 inches or 19 inches wide x 164 feet long

SPEC WRITERS NOTE: With drainage systems allowing, air circulation and cavity ventilation allows moisture to escape. VaproShim™ and VaproMat™ ensure continuous air flow throughout the cavity, for the life of the roof. Include 2.01.D. for Water-Resistive Weather Barrier Shim or Mat Accessories.

D. WATER-RESISTIVE WEATHER BARRIER BATTEN, SHIM OR MAT ACCESSORIES

- 1. Water-resistive weather drainage and ventilation accessories by VaproShield.
  - a. VaproShim™ Neoprene/EPDM accessory used under horizontal or vertical cladding attachment components to create a vertical drainage plane for roofing, while sealing fastener penetrations.
  - b. VaproMat™ Lightweight, hydrophobic filter fabric with a 3 mm or 7 mm polypropylene drainage matrix attached, designed to maintain a drainage cavity under roofing material, promoting rapid drying.

2.02 2.02 PENETRATION SEALANT

- A. Provide sealant for penetrations as recommended by manufacturer and as specified under Division 07 Section: Sealants. Appropriate sealants shall be Dow Corning® 758 or VaproLiqui-Flash™.

**PART 3 EXECUTION**

3.01 GENERAL

- A. Verify that surfaces and conditions are ready to accept the Work of this section. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.
- B. All surfaces must be dry, sound, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the fully self-adhered roof

underlayment membrane. Fill voids and gaps greater than 7/8 inch (22 mm) in width, in substrate to provide an even surface.

- C. Ensure all preparatory work, including installation of mechanical and electrical penetrations and fixtures are complete and secured in-place prior to applying fully self-adhered roof underlayment membrane.
- D. Install per manufacturer's most current published installation instructions available at time of installation.

### 3.07 FIELD QUALITY CONTROL

- A. [Owner will engage] [Engage] an independent inspector to observe substrate and installation. Inspector shall provide a written, sign-off log, on all penetrations before the underlayment is placed against them. Form of log shall be approved by Architect before contract with inspection service is approved.

### 3.08 PROTECTING AND CLEANING

- A. Protect completed installations of fully self-adhered water-resistive roof underlayment membrane from damage due to extreme weather conditions, physical abuse and other subtrades.
- B. Cover membrane as soon as practical.
- C. Repair damaged water-resistive roof underlayment membrane. Measure and pre-cut roof underlayment membrane to cover damaged area with minimum 12 inch overlap to the sides and bottom. Roll membrane to ensure positive contact. Provide Dow Corning® 758 Weather Barrier Sealant over exposed leading edge of membrane terminations.
- D. Remove and replace roof underlayment membrane affected by chemical spills or surfactants.

END OF SECTION