

SECTION 07 30 00.01

WATER-RESISTIVE ROOF UNDERLAYMENT

SPEC WRITERS NOTE: This specification includes materials and installation procedures for **SlopeShield®** Water-Resistive Vapor Permeable Air Barrier Sheet Water-Resistive Vapor Permeable Roof Underlayment with Integrated Tape; a mechanically attached, water-resistive vapor permeable sheet underlayment used as a secondary rain barrier under sloped roofing systems. With a vapor permeance rating of 59 perms (3392ng/Pa.s.m²) **SlopeShield®** 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 a mechanically attached 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 water-resistive vapor permeable roof underlayment membrane, weather barrier flashings, lap seam tapes, metal flashings, ventilation strips, roof finish system complete with clips, fastener caps, 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 D 1682 Standard Test Methods for Breaking Load and Elongation of Textile Fabrics
- B. ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials
- C. AC 48 Acceptance Criteria for Roof Underlayments for use in severe climate areas
- D. AC 207 Acceptance Criteria for Polypropylene Roof Underlayments
- E. ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials

1.05 SUBMITTALS

- A. Submit documentation from an approved independent testing laboratory certifying compliance with, a) the resistance to Hydrostatic Pressure, b) ASTM D 1682 - Tensile Properties, c) ASTM E 84 – Class A Surface Burning Characteristics, d) ASTM E 96/E 96M - Test Methods for Water Vapor Transmission of Materials, and e) ASTM E 2178 - Standard Test Method For Air Permeance of Building Materials.
- B. Submit documentation from an approved independent testing laboratory certifying the membrane meets ICC-ES AC 48 and AC 207.
- C. Submit manufacturer's current product data sheets, details and installation instructions for the water-resistive vapor permeable roof underlayment membrane components and accessories.
- D. Submit samples of the following:
 - 1. Manufacturer's sample 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: 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 8 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 MSDS 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 as well as 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 water-resistive vapor permeable roof underlayment membrane without the aid of primers or surface conditioners.
 - 2. Manufacturer's complete set of details for 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 is **not to be used as a temporary roof covering** during the construction period. SlopeShield can sustain long term UV exposure but is not intended to be the primary liquid water hold out barrier. Temporary protection measures such as tarps must be used when rain, snow/ice or storms exist or are anticipated. Recommendation is to cover SlopeShield with permanent roof cladding as soon as practical, i.e. cover each course with roofing during installation.

1.10 WARRANTY

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

PART 2 - PRODUCTS

2.01 MATERIALS

Primary water-resistive vapor permeable roof underlayment membrane, components and accessories must be obtained as a single-source to ensure total system compatibility and integrity. No external face applied tapes at horizontal or vertical joints permitted.

A.

1. Water-resistive vapor permeable roof underlayment membrane manufactured by VaproShield LLC., Gig Harbor, WA, Ph (866) 731-7663, Email: info@VaproShield.com, Website: www.vaproshield.com.

B. WATER-RESISTIVE VAPOR PERMEABLE ROOF UNDERLAYMENT (Basis of Design)

1. Primary water-resistive vapor permeable roof underlayment sheet membrane with Integrated Tape (allowing for downslope installation) shall be SlopeShield® Water-Resistive Roof Underlayment by VaproShield, a zero VOC mechanically attached vapor permeable water-resistive sheet membrane consisting of multiple layers of UV stabilized spun-bonded polypropylene having the following properties:
 - a. Color: Red
 - b. Integrated tape (clear): on exterior face, factory applied to exterior vertical edge of membrane (color side) covered with recyclable clear release tape paper.
 - c. Vertical Shingle Lap Line: Continuous dashed line, factory applied to exterior face of membrane, used to mark the vertical edge placement of the top course of membrane to be lapped over the lower course.
 - d. Integrated tape (clear): on interior face, factory applied to interior vertical edge of membrane (white side) covered with recyclable clear release tape paper.
 - e. Application Temperature: No temperatures restrictions
 - f. Physical Properties: 0.020 inches thick and 5.01 oz./ sq. yd.
 - g. Water Vapor Permeance tested to ASTM E 96 Method B: 59 perms (3392ng/Pa.s.m²)
 - h. Water Resistance tested (Ponding): AC 48, Pass, no leakage
 - i. Tensile Strength tested to ASTM D 1682: Pass
 - j. Liquid Water Transmission to ASTM D4869: Pass

C. WATER-RESISTIVE VAPOR PERMEABLE ROOF UNDERLAYMENT MEMBRANE FASTENERS

1. Water-resistive roof underlayment membrane fasteners shall be corrosion resistant screws with preformed head caps.
2. Screw head caps for water-resistive roof underlayment membrane shall be VaproCaps by VaproShield, a 1¾ inch diameter preformed screw head caps with a center throat hole that seals the membrane at the fastener penetration, specifically designed and tested to withstand wind loads and protect against water intrusion at screw penetrations.
3. Selection of fastener length is subject to sheathing board or substrate type. Manufacturer recommends subcontractor to supply and place corrosion-resistant stainless steel screws sized to penetrate the sheathing board and solid backing or steel deck by ¾ inch in conjunction with preformed screw head caps.

D. WATER-RESISTIVE FLASHING MEMBRANE

1. Self-adhered underlayment flashing membrane shall be VaproFlashing SA™ by VaproShield, a zero VOC 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

2.02 PENETRATION AND HORIZONTAL SEAM SEALANT

- A. Water-resistive air barrier sealant compatible with sheet membrane shall be Dow Corning® 758, a modified silicon-based Sealant tested for compatibility with VaproShield products.

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 sound, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the self-adhered flashing membranes. Fill voids, gaps 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 water-resistive vapor permeable roof underlayment membrane.
- D. Mechanical fasteners used to secure sheathing boards, insulation or penetrate roof deck shall be set flush with surface and fastened into solid backing.
- E. Roof slope shall be not less than 3:12.
- F. See website for most recent installation instructions www.vaproshield.com

3.02 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.

3.03 PROTECTING AND CLEANING

- A. Protect completed installations of 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 and extend minimum 6 inches under upper sheet.
- D. Secure underlayment patch with specified Dow 758 Sealant.
- E. Remove and replace roof underlayment membrane affected by chemical spills or surfactants.

END OF SECTION