
SECTION 07 53 10

ELASTOMERIC PVC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Provide polyvinyl chloride (PVC) type elastomeric sheet membrane roofing system with base flashings, insulation, roof deck board, and accessories for complete, weather-tight installation.
- B. Related Sections:
 - 1. Section 07 14 00: Hot fluid-applied waterproofing at decks.
 - 2. Section 07 60 00: Flashing and sheet metal.

1.2 REFERENCE STANDARDS

- A. National Roofing Contractors Association: The NRCA Roofing and Waterproofing Manual.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Installation Meeting: Convene not less than one week prior to commencing work of this section. Require attendance of parties directly affecting roofing work.
 - 1. Review procedures and coordination required with related work.

1.4 SUBMITTALS

- A. Product Data: Submit membrane manufacturer's literature for membrane and base flashing materials; provide specific recommendations of insulation system manufacturer.
 - 1. Submit membrane manufacturer's recommendations for surface conditioning, flashing, joint cover and crack sealants, and temperature range for application of materials.
- B. Shop Drawings: Submit for PVC sheet seams and insulation layout; indicate location and insulation type; provide cross section indicating layers of insulation along with R-value calculations.
- C. Samples: Submit samples of each exposed material.
- D. Certifications:
 - 1. Installer: Submit certification installer is approved for roof system installation.

2. Materials: Submit certification materials and components conform to Specifications and are compatible with each other, roof substrate, and related work.
3. Fire and Wind: Submit manufacturer's certification system conforms to fire and wind requirements.
4. Manufacturer Representative: Submit certification by manufacturer's representative indicating work has been installed in accordance with manufacturer's recommendations and installation instructions.

1.5 QUALITY ASSURANCE

- A. Sustainability Requirements: Comply with CALGreen requirements including those relative to energy efficiency.
- B. Qualification of Installers: Company with minimum five years successful experienced in PVC membrane roof application on projects of similar scope.
 1. Installer: Roofing and insulation manufacturer certified or approved.
- C. Supervisor: Installer to maintain full-time supervisor/foreman who is on jobsite during roofing work who is experienced in installation of roofing system specified.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect foam insulation from direct sunlight exposure.

1.7 SITE CONDITIONS

- A. Do not apply roofing membrane during inclement weather or when air temperature may fall below 40 degrees F.
 1. Do not allow materials to be exposed to moisture during transportation, storage, handling or installation.
 2. Mark damp or wet materials, including felts which froth or foam during installation, and remove from site within 24 hours.
- B. Do not apply materials to damp, dirty, dusty, or otherwise unsuitable surfaces.
 1. Allow concrete surfaces to cure minimum 28 days.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.8 WARRANTY

- A. Extended Correction Period: Provide for correcting failure of system to resist damage from anticipated sources including damage from wind and water penetration. Repair system and pay for or replace damaged materials and surfaces.

1. Period: Two years.
- B. Manufacturer's Warranty: Submit manufacturer's warranty including special manufacturer services as required for manufacturer's warranty.
 1. Period: 20 years.
 2. Manufacturer's warranty shall not detract from requirements of extended correction period nor from Owner's rights under implied and expressed warranties regardless of wording of manufacturer's warranty.

PART 2 - PRODUCTS

2.1 SYSTEMS MANUFACTURERS

- A. Carlisle SynTec Systems, Versico Roofing Systems.
- B. Johns Manville.
- C. Sarnafil Inc.
- D. Substitutions: Refer to Section 01 25 00.

2.2 MATERIALS

- A. System Description: Provide polyvinyl chloride (PVC) type elastomeric sheet membrane roofing system with base flashings, and accessories.
 1. System: Fully adhered exposed membrane.
 2. Provide roofing system materials by a single manufacturer, except where materials of other manufacturers are specified or approved by Architect.
 3. Provide roof insulation, double layer application where indicated.
 4. Provide tapered insulation as required to ensure positive slopes to drains.
 5. Provide roof deck board to separate insulation from roof membrane.
- B. Regulatory Requirements
 1. Cool Roof System: Comply with California Building Standards Code requirements for "Cool Roof" system including three-year aged solar reflectance value requirements.
 - a. Label: System to have Cool Roof Rating Council (CRRC) label.
 2. Fire and Wind Resistance: Conform to California Building Standards Code requirements for Underwriters Laboratory (UL) Class A roof system, with UL Class 60 wind resistance classification.
 - a. Provide materials conforming to code requirements for roof/ceiling 1-hour fire resistive rating for components and materials indicated in Contract Documents.
- C. Roof Membrane: Fiber reinforced polyvinyl chloride elastomeric (PVC) membrane, thickness as recommended by roof membrane manufacturer for application involved, but no less than 60 mils.

1. Basis of Design: Carlisle Versico/WersiFlex PVC roofing system.
 2. Scrim Reinforcing: Manufacturer's standard fleece, fiberglass, or polyester scrim.
 3. Corners and Elastomeric Membrane Flashing: Provide products using same base material as roof membrane; corners preformed.
 4. Seams: Solvent welded and seam sealant finished.
 5. UV Resistance: Provide materials with demonstrated resistance to ultraviolet light with no visible surface cracking or discoloration based on industry accepted accelerated test methods.
 6. Provide materials compounded specifically for application methods and substrates indicated on Drawings; comply with requirements for fire rated materials.
 7. Color: As indicated, as selected by Architect from manufacturer's full range of cool roof rated colors where not indicated.
- D. Insulation: Provide materials approved for use with specified membrane and suitable for application indicated; provide tapered insulation where insulation is indicated to provide roof slopes.
1. Polyisocyanurate Insulation: ASTM C1289, Type II, Class 1, Grade 2 glass fiber faced isocyanurate, with ASTM C1303 Long Term Thermal Resistance (LTTR).
 2. Thermal Resistance: Minimum total R-38.
- E. Roof Deck Board: ASTM C1278 with moisture and mold resistant core. Provide as indicated, as required for uniform surface for membrane adherence, and as required for fire and wind ratings.
1. Manufacturers:
 - a. Carlisle Versico/Securock.
 - b. Georgia Pacific/DensDeck Prime.
 - c. Johns Manville/Securock.
 - d. Substitutions: Refer to Section 01 25 00.
- F. Accessories: Provide as recommended by membrane manufacturer and system manufacturer as required for complete weather-tight installation, including, but not limited to:
1. Bonding adhesives, splicing cement, and lap sealants and mastics.
 2. Seam plates.
 3. Molded pipe flashing.
 4. Temporary sealing, for end of day closing of membrane.
 5. Mechanical fasteners.
- G. Roof Protection Pads: Provide protection materials as recommended by membrane manufacturer where maintenance traffic is anticipated over membrane.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify deck is dry, clean and smooth, free of depressions, waves and projections detrimental to roofing membrane, and properly sloped for drainage.
- B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set and that cant strips, nailing strips, and reglets are in place.
- C. Beginning installation indicates acceptance of substrate.
- D. Metal Surfaces: Remove contaminants which may adversely affect adhesion or performance of roofing system; apply metal primer.

3.2 INSTALLATION

- A. Install membrane roofing system in accordance with manufacturer's recommendations and instructions and as required to meet requirements for warranty and applicable codes.
 - 1. Comply with NRCA Specification Guide for Thermoset Roof Membranes as applicable; where conflicts exist comply with manufacturer's recommendations.
- B. Insulation: Install insulation in accordance with insulation manufacturer's recommendations and roof membrane manufacturer's recommendations for installation indicated.
 - 1. Place insulation boards butted in close contact; stagger joints between insulation board layers.
 - 2. Bevel insulation to allow snug fit at penetrations; cut neatly around protrusions through roof.
- C. Roof Deck Board: Install in accordance with manufacturer recommendations and as required to ensure suitable substrate for membrane roofing over insulation, fire ratings, and wind ratings; secure to roofing deck.
 - 1. Place roof deck boards butted in close contact; stagger joints between roof deck board and insulation board joints.
 - 2. Cut to allow snug fit at penetrations; cut neatly around protrusions through roof.
- D. Roof Membrane: Apply membrane in accordance with membrane manufacturer's recommendations and installation instruction. Provide heat welded seams.
 - 1. Apply sheet membrane smooth, free from air pockets, wrinkles, fishmouths, unlappped joints, or tears, over first layer insulation.

2. Extend roof membrane up vertical surfaces minimum 8" wherever possible and secure to nailing strips or reglets; reinforce corners with double applications of membrane.
 3. Install membrane flashings and seal into membrane.
 - a. Coordinate installation of roof drains and related flashings.
 4. Seal flashings and items projecting through membrane; seal terminations with additional layer of membrane and mastic.
 5. Prevent compounds from entering and clogging drains, and from spilling or migrating onto surface of other work.
- E. Roof Protection Pads: Secure roof protection pads in place in accordance with membrane manufacturer recommendations and as required to ensure protection of membrane from roof maintenance traffic.
1. Set pads to allow roof drainage; where pads cross drainage path set with not less than 4" and not more than 8" between pads.

3.3 FIELD QUALITY CONTROL

- A. Site Tests: Flood test roofing prior to installation of insulation and ballast; if defects are revealed, repair and repeat flood test until no defects are revealed.
1. Do not overload structure with flood test; if necessary, section off areas as necessary.
 2. Test for leaks with 2" depth of water maintained for 24 hours.
- B. Manufacturer's Field Services: Manufacturer's representative shall inspect work of Project on regular basis and provide certification roofing system has been installed in accordance with manufacturer's recommendations.
1. Provide unobstructed access to roofing work.
 2. Correct defects and irregularities as advised by manufacturer's representative.

3.4 CLEANING

- A. Remove roofing membrane markings from finished surfaces.
- B. In areas where finished surfaces are soiled by bitumen or other source of soiling caused by roofing work, consult manufacturer of finished surfaces for recommended cleaning methods.
- C. Leave completed roof free from debris and uniform in appearance.

3.5 PROTECTION

- A. Where work must continue over finished roofing membrane, protect surface with plywood sheets.

END OF SECTION