

SECTION 075320
FULLY ADHERED MEMBRANE ROOFING OVER LIGHTWEIGHT INSULATING CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Elastomeric roofing membrane, adhered conventional application.
- B. Flashings.
- C. Roofing cant strips, stack boots, and walkway pads.

1.02 RELATED SECTIONS

- A. Section 06 1000 - Rough Carpentry: Wood nailers and cant strips.
- B. Section 077234 - RoofHa: Counterflashings .

1.03 REFERENCES

- A. ASTM C 177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.
- B. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2013.
- C. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension; 2006a (Reapproved 2013).
- D. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2012).
- E. ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact; 2013.
- F. ASTM D 2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2005 (Reapproved 2010).
- G. ASTM D 4637 - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2013.
- H. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials; 2012.
- I. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.
- J. FM DS 1-28 - Design Wind Loads; Factory Mutual Research Corporation; 2007.
- K. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.; current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of associated counterflashings installed under other sections.
- B. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials and insulation.
- C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, setting plan for tapered insulation, and paver layout.
- D. Samples for Verification: Submit two samples 6 x 6 inches in size illustrating insulation and membrane.
- E. Samples of Pavers: Submit two.
- F. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

- G. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- H. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- I. Warranty: Submit manufacturer warranty and ensure forms have been completed in {GT#0}'s name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years of documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture.
- C. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not apply roofing membrane when ambient temperature is below 40 degrees F or above 100 degrees F.
- C. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.09 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide an applicators two year warranty to begin after Date of Substantial Completion for any damages to the building resulting from defective Work, to be repaired immediately.
- C. Provide 15 year manufacturer's material and labor warranty to cover failure to prevent penetration of water. Warranty is to be of the full replacement value.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. EPDM Membrane Materials:
 - 1. Carlisle SynTec Incorporated: www.carlisle-syntec.com.
 - 2. Firestone Building Products Co: www.firestonebpco.com.

2.02 ROOFING- UNBALLASTED APPLICATIONS

- A. Elastomeric Membrane Roofing: One ply membrane, fully adhered , over insulation.
- B. Roofing Assembly Requirements:
 - 1. Roof Covering External Fire-Resistance Classification: UL Class A.
 - 2. Factory Mutual Classification: Class I and windstorm resistance of I-90, in accordance with FM DS 1-28.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane: Ethylene-propylene-diene-terpolymer (EPDM); externally reinforced with fabric ; complying with minimum properties of ASTM D 4637.
 - 1. Carlisle's FleeceBack 100 Brite-Ply.
 - 2. Thickness: 0.045 inch.
 - 3. Color: White.

4. Tensile Strength: 1830 psi, measured in accordance with ASTM D 412.
 5. Ultimate Elongation: 300 percent, measured in accordance with ASTM D412.
 6. Tear Strength: 150 lbf/in, measured in accordance with ASTM D 624.
 7. Brittleness Temperature: -49 deg F., measured in accordance with ASTM D 746.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Flexible Flashing Material: Same material as membrane; conforming to the following:
1. Thickness: 45 mil.
 2. Tensile Strength: 1,200 psi.
 3. Elasticity: 50 percent with full recovery without set.
 4. Color: White.

2.04 DECK SHEATHING

- A. Deck Sheathing: Carlisle's HP Recovery Board underlayment; minimum 1/2" thick installed per manufacturer's recommendations.

2.05 ACCESSORIES

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
- B. Wood Cants: Wood blocking, pressure preservative treated.
- C. Membrane Adhesive: As recommended by membrane manufacturer.
- D. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.
- E. Sealants: As recommended by membrane manufacturer.
- F. Walkway Pads: 24x24x0.6 inch, White finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 MEMBRANE APPLICATION

- A. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- B. Shingle joints on sloped substrate in direction of drainage.
- C. Fully Adhered Application: Apply adhesive with heated spray equipment to substrate at rate recommended by manufacturer. Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
- D. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
- E. At intersections with vertical surfaces:
1. Extend membrane over cant strips and up a minimum of 4 inches onto vertical surfaces.
 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- F. Around roof penetrations, seal flanges and flashings with flexible flashing.
- G. Coordinate installation of roof drains and sumps and related flashings.

3.03 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for general requirements for field quality control and inspection.
- B. Require site attendance of roofing and insulation material manufacturers daily during installation of the Work.

3.04 CLEANING

- A. Remove bituminous markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.

3.05 PROTECTION OF FINISHED WORK

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION