

SECTION 07 5400
THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Mechanically attached system with thermoplastic roofing membrane.

1.02 REFERENCE STANDARDS

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2014.
- B. ASTM D6878/D6878M - Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing; 2013.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.
 - 1. Review preparation and installation procedures and coordinating and scheduling required with related work.

1.04 SUBMITTALS

- A. Product Data: Provide data indicating membrane materials, flashing materials, insulation, vapor retarder, surfacing, and fasteners.
- B. Specimen Warranty: For approval.
- C. Warranty:
 - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
 - 2. Submit installer's certification that installation complies with all warranty conditions for the waterproof membrane.

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section:
 - 1. With minimum 5 years documented experience.
 - 2. Approved by membrane manufacturer.

1.06 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.

1.07 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 (5 degrees C) or above 85 degrees F (____ degrees C).
- 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.

1.08 WARRANTY

- A. System Warranty: Provide manufacturer's system warranty agreeing to repair or replace roofing that leaks or is damaged due to wind or other natural causes.
 - 1. Warranty Term: 15 years.

2. For repair and replacement include costs of both material and labor in warranty.

PART 2 PRODUCTS

2.01 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane:
 1. Material: Thermoplastic polyolefin (TPO) complying with ASTM D6878/D6878M.
 2. Reinforcing: Internal fabric.
 3. Thickness: 0.060 inch (1.5 mm), minimum.
 4. Sheet Width: Factory fabricated into largest sheets possible.
 5. Color: White.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Membrane Fasteners: As recommended and approved by membrane manufacturer.
- D. Flexible Flashing Material: Same material as membrane.

2.02 DECK SHEATHING AND COVER BOARDS

- A. Cover Board: Polyisocyanurate board, complying with ASTM C1289, Type II, Class 4, glass fiber mat both faces, and with the following characteristics:

2.03 ACCESSORIES

- A. Stack Boots: Prefabricated flexible boot and collar for pipe stacks through membrane; same material as membrane.
- B. Membrane Adhesive: As recommended by membrane manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Perform work in accordance with NRCA Roofing and Waterproofing Manual and manufacturer's instructions.
- B. Do not apply roofing membrane during unsuitable weather.
- C. Do not apply roofing membrane when ambient temperature is outside the temperature range recommended by manufacturer.
- D. Do not apply roofing membrane to damp or frozen deck surface or when precipitation is expected or occurring.
- E. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

3.02 PREPARATION

- A. Ensure existing roofing is completely removed. Remove all existing roofing, shingles, underlayment, fasteners, and accessories from roof deck.
- B. Inspect existing roof decking for structural damages. Notify Owner of any structural defects or damaged decking. Replace as needed.

3.03 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.

3.04 WOOD DECK PREPARATION

- A. Verify flatness and tightness of joints of wood decking. Fill knot holes with latex filler.

3.05 VAPOR RETARDER AND INSULATION - UNDER MEMBRANE

- A. Lay subsequent layers of insulation with joints staggered minimum 6 inch (150 mm) from joints of preceding layer.
- B. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- C. Do not apply more insulation than can be covered with membrane in same day.

3.06 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. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches (75 mm). Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
- D. Mechanical Attachment: Apply membrane and mechanical attachment devices in accordance with manufacturer's instructions.
- E. At intersections with vertical surfaces:
 - 1. Extend membrane over cant strips and up a minimum of 4 inches (100 mm) 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.

3.07 CLEANING

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. Remove bituminous markings from finished surfaces.
- C. 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.
- D. Repair or replace defaced or damaged finishes caused by work of this section.

3.08 PROTECTION

- 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