

**SECTION 071300
SHEET WATERPROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Self-adhered modified bituminous sheet membrane.

1.02 RELATED REQUIREMENTS

- A. Section 221006 - Plumbing Piping Specialties: Roof drain and plumbing vent flashing flanges.

1.03 REFERENCE STANDARDS

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).
- B. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 2022.
- C. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers; 2000 (Reapproved 2020).
- D. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact; 2020.
- E. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting; 2018.
- F. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.
- G. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).
- H. ASTM D5385/D5385M - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes; 2020.
- I. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
- J. NRCA (WM) - The NRCA Waterproofing Manual; 2021.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for membrane, surface conditioner, and joint and crack sealants.
- C. Shop Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.
- D. Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures and acceptable installation temperatures.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 FIELD CONDITIONS

- A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until liquid or mastic accessories have cured.

1.07 WARRANTY

- A. See Section 017800 - Project Closeout for additional warranty requirements.

- B. For warranty repair work, remove and replace materials concealing waterproofing.

PART 2 PRODUCTS

2.01 SHEET WATERPROOFING MATERIALS

- A. Self-Adhered Modified Bituminous Sheet Membrane:
1. Thickness: 60 mil, 0.060 inch, minimum.
 2. Sheet Width: 36 inches, minimum.
 3. Tensile Strength:
 - a. Film: 5,000 psi, minimum, measured in accordance with ASTM D882 and at grip-separation rate of 2 inches per minute.
 - b. Membrane: 325 psi, minimum, measured in accordance with ASTM D412 Method A, using die C and at spindle-separation rate of 2 inches per minute.
 4. Elongation at Break: 300 percent, minimum, measured in accordance with ASTM D412.
 5. Low Temperature Flexibility: Unaffected when tested in accordance with ASTM D1970/D1970M at minus 20 degrees F, 180 degree bend on 1 inch mandrel.
 6. Water Absorption: 0.1 percent increase in weight, maximum, measured in accordance with ASTM D570, 24 hour immersion.
 7. Hydrostatic Pressure Resistance: Membrane resists leakage for at least one hour from pressure equivalent to 200 feet head of water applied in accordance with test method ASTM D5385/D5385M.
 8. Adhesives, Sealants, Tapes, and Accessories: As recommended by membrane manufacturer.
 9. Products:
 - a. Carlisle Coatings & Waterproofing Inc; MiraDRI 860/861: www.carlisleccw.com/#sle.
 - b. GCP Applied Technologies; Bituthene 3000: www.gcpat.com/sle.
 - c. W.R. Meadows, Inc; MEL-ROL: www.wrmeadows.com/#sle.

2.02 ACCESSORIES

- A. Drainage Panel: Drainage layer with geotextile filter fabric on earth side.
1. Composition: Dimpled polystyrene, polyethylene, or polypropylene core; polypropylene filter fabric.
- B. Flexible Flashings: Type recommended by membrane manufacturer.
- C. Termination Bars: Aluminum; compatible with membrane and adhesives.
- D. Thinner and Cleaner: As recommended by adhesive manufacturer, compatible with sheet membrane.
- E. Dumbbell Waterstop: D6-38 by Gamco Inc.; www.gamcoform.com. Use with manufacturer premolded corners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions are acceptable prior to starting work.
- B. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.
- C. Verify that items penetrating surfaces to receive waterproofing are securely installed.

3.02 PREPARATION

- A. Protect adjacent surfaces from damage not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.
- C. Do not apply waterproofing to surfaces unacceptable to membrane manufacturer.
- D. Surfaces for Adhesive Bonding: Apply surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.

3.03 INSTALLATION - MEMBRANE

- A. Install membrane waterproofing in accordance with manufacturer's instructions and NRCA (WM) applicable requirements.
- B. Roll out membrane, and minimize wrinkles and bubbles.
- C. Self-Adhering Membrane: Remove release paper layer, and roll out onto substrate with a mechanical roller to provide full contact bond.
- D. Overlap edges and ends, minimum 3 inches, seal permanently waterproof by method recommended by manufacturer, and apply uniform bead of sealant to joint edge.
- E. Weather lap joints on sloped substrate in direction of drainage, and seal joints and seams.
- F. Coordinate with drain installation.
- G. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.
- H. Seal membrane and flashings to adjoining surfaces.
 - 1. Install termination bar along edges.
 - 2. Install counterflashing over exposed edges.

3.04 INSTALLATION - DRAINAGE PANEL AND PROTECTION BOARD

- A. Place drainage panel directly against membrane, butt joints, place to encourage drainage downward; scribe and cut boards around projections, penetrations, and interruptions.
- B. Place protection board directly against drainage panel; butt joints, and scribe and cut boards around projections, penetrations, and interruptions.
- C. Adhere protection board to substrate with compatible adhesive.

3.05 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Upon completion of horizontal membrane installation, dam installation area in preparation for flood testing.
- C. Flood to minimum depth of 1 inch with clean water, and after 48 hours inspect for leaks.
- D. If leaking is found, remove water, repair leaking areas with new waterproofing materials as directed by Architect; repeat flood test, and repair damage to building.
- E. When area is proven watertight, drain water and remove dam.

3.06 PROTECTION

- A. Do not permit traffic over unprotected or uncovered membrane.

3.07 SCHEDULE

- A. Foundation wall: Elevator Pit.
- B. Other areas as noted on drawings.

END OF SECTION