



## SECTION 07110

### SHEET MEMBRANE WATERPROOFING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Rubberized Asphalt Sheet Membrane Waterproofing System
- B. Protection Board

##### 1.02 RELATED SECTIONS

- A. Section 02712 - Subsurface Drainage Pipe
- B. Section 03300 - Cast in Place Concrete
- C. Section 04200 - Unit Masonry
- D. Section 05810 - Expansion Joint Cover Assemblies
- E. Section 07150 - Dampproofing
- F. Section 07600 - Flashing and Sheet Metal
- G. Section 07900 - Joint Sealers
- H. Section 15400 - Drains

##### 1.03 REFERENCES

- A. ANSI/ASTM D412 - Tests for Rubber Properties in Tension
- B. ANSI/ASTM E96 - Tests for Water Vapor Transmission of Materials in Sheet Form.
- C. ANSI/ASTM C836 - Test Method for High Solids Content, Cold Liquid Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.

- D. ANSI/ASTM E154 - Testing Materials for use as Vapor Barriers Under Concrete Slabs and as Ground Cover in Crawl Spaces
- E. ANSI/ASTM D5385 - Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes

#### 1.04 SUBMITTALS

- A. Product Data: Provide manufacturer's standard information on membrane waterproofing installation instructions and product data.
- B. Samples:
  - 1. Waterproofing membrane: Submit 3x4 inch sample.
  - 2. Protection board: Submit representative sample.

#### 1.05 QUALITY ASSURANCE

- A. Qualifications: Applicator shall be a company specializing in the work of this Section and approved by the waterproofing membrane manufacturer.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in the manufacturer's original containers, dry and undamaged, seals and labels intact.
- B. Store products in weather protected environment out of direct sunlight, below 90°F, above 32°F clear of ground and moisture. All waterproof tarps shall be opaque.
- C. Do not double stack pallets.

#### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply waterproofing membrane during inclement weather, to a damp or frosty surface, or when ambient temperatures are below 35°F or above 90°F.

#### 1.08 PRE-INSTALLATION CONFERENCE

- A. Convene prior to commencing work of this Section. Meet at project site with installer, sheet membrane waterproofing manufacturer, installers of related work, architect, and owner.
- B. Review installation procedures and coordination required with related work.

## 1.09 WARRANTY

- A. Provide manufacturer's standard written 5 year limited material warranty upon completion of the work.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS - SHEET MEMBRANE WATERPROOFING**

- A. Waterproofing membrane materials manufactured by TAMKO® Building Products, Inc. P.O. Box 1404, 220 W. 4th Street, Joplin, MO 64801.**

### 2.02 MASTIC

- A. TAMKO TWM-1 Mastic

### 2.03 PRIMERS

- A. TAMKO TWP-1 Quick Dry Primer
- B. TAMKO TWP-2 Water Based Primer

### 2.04 SEALANT

- A. Single component polyurethane sealant.

### 2.05 PROTECTION BOARD

- A. TWH-1 Protection Course for horizontal applications.
- B. For vertical protection, follow manufacturer's recommendations.

## **PART 3 EXECUTION**

### 3.01 INSPECTION

- A. Verify that surfaces and site conditions are ready to receive work. Do not start work until all defects have been corrected.

### 3.02 PREPARATION

- A. Preparation of the surface shall be done in accordance with the sheet membrane manufacturer's written instructions. Surfaces shall be clean and smooth, free

of depressions, waves, projections, voids, spalled areas, holes (tie rod or rock pockets), spatters, ridges, and loose aggregate. Any contaminants shall be removed such as grease, oil, and wax.

- B. Concrete must be properly cured and dry. Curing time is a minimum of 7 days for normal structural concrete and a minimum of 14 days for lightweight structural concrete. Only self dissipating curing compounds acceptable to the waterproofing membrane manufacturer shall be used. Resin type curing compounds shall not be used. Porous brick or block shall have smooth trowel-cut mortar joints or parge coat.
- C. All concrete surfaces shall have a smooth finish (broom finish is not acceptable).
- D. Removable forms shall be removed as soon as possible. Membrane must not be applied to decks with forms in place, unless the forms are vented.
- E. Grind irregular construction joints and high spots off to a suitable flush surface.
- F. Cracks greater than 1/16" in width shall be cut out to a minimum width of 1/4" with a minimum depth of 1/4", and sealed using polyurethane sealant prior to the installation of the sheet membrane.

### 3.03 PRIMING

- A. Quick Dry Primer: Apply primer to a properly prepared, clean surface. All surfaces that are to receive a waterproofing membrane shall be primed at the rate of 250 to 300 ft<sup>2</sup> per gallon. Apply an even coat, and allow to dry. Refer to manufacturer's written application instructions for specific application rates and drying time.
- B. Water-Based Primer: Apply primer to a properly prepared, clean surface. All surfaces that are to receive a waterproofing membrane shall be primed at the rate of 350 to 400 ft<sup>2</sup> per gallon. Apply an even coat, and allow to dry. Refer to manufacturer's written application instructions for specific application rates and drying time.

### 3.04 APPLICATION

- A. Horizontal: Starting at the low point of the surface and working to the high point, install the sheet waterproofing membrane by simultaneously rolling the sheet into place while pulling and rolling the release paper. Side laps shall be a min. 2.5", and end laps shall be a min. 5". Stagger all end laps. All terminating edges shall be sealed with mastic. Check that the seams are firmly sealed and there are no gaps or fishmouths.
- B. Vertical: Apply membrane in lengths not to exceed 8'. Start at the lowest point with the top section overlapping the bottom section by a minimum of 5". If the membrane is terminated on a vertical surface a reglet or counterflashing shall be used. Apply TWM-1 mastic to all terminations.

### 3.05 FLOOD TEST

- A. Before the application of a protection layer, all horizontal applications shall be flood tested with a minimum of 2" head of water for 24 hours.
- B. Check for leaks and make repairs immediately. Before flood testing, be sure the structure is capable of withstanding the dead load of the water. Retest after repairs have been made.

### 3.06 MEMBRANE PROTECTION

- A. Vertical surfaces shall be protected immediately following installation of the membrane.
- B. Horizontal surfaces shall be protected immediately following the 24 hour flood test. If the flood test is delayed, a temporary protection layer must be installed to protect the membrane from future operations and other trades.

### 3.07 CLEAN UP

- A. In areas where adjacent finished surfaces are soiled by work of this Section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions. Remove all debris, tools and equipment.