

## SECTION 093000 - SHEET MEMBRANE WATERPROOFING

### PART 1 - GENERAL

This specification includes the sheet membrane and liner used as waterproofing in conjunction with tile and dimension stone installations. The content of this section should be combined with the specification for the tile and stone finishes including the setting materials required to complete the sheet membrane installation.

#### 1.1 SUMMARY

Typical Floors and Walls: Chloraloy sheet membrane may be installed for waterproofing on floor and wall substrates for tile and dimension stone installation.

- A. Section Includes:
  - 1. Sheet membrane for waterproofing [tile] [and] [dimension stone] installations.

The next three paragraphs describe Chloraloy used as waterproofing for floors and walls at showers, tub surrounds, and other wet areas.

- a. Sheet membrane.
- b. Sheet membrane liner.

#### 1.2 REFERENCES

- A. ASTM D 4068 - Standard Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane.
- B. ASTM E 96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each specified product.
- B. LEED Submittals:
  - .

Include the next paragraph for LEED NC, LEED CS, and LEED for Schools.

- 1. Certificates for Credit MR 5: For regional materials, indicating location of manufacturer and point of extraction, harvest, or recovery. Include distance to Project, cost, and fraction by weight for regional components.

Include the next paragraph for LEED CI, only.

2. Certificates for Credit MR 5: For regionally manufactured [**and regionally extracted and manufactured**] materials indicating location of manufacturer [**and point of extraction, harvest, or recovery**]. Include distance to Project, cost, [**and fraction by weight**] for regional components.

Include the next paragraph for LEED NC, LEED CI, and LEED CS.

3. Data for Credit IEQ 4.1: For [**adhesives**] [**and**] [**sealants**], statement of VOC content.
- C. Shop Drawings:
1. Include details sheet membrane waterproofing installation, with flashings and terminations.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

Include option IAPMO for use with UPC.

- A. Sheet Membrane: ASTM D 4068, composite sheet membrane made from an alloy of non-plasticized chlorinated polyethylene (CPE) listed by IAPMO (UPC #4036)
1. Basis of Design Manufacturer: Noble Company.
  2. Basis of Design Product: Chloraloy.
  3. Performance:

Include water vapor permeance. Procedure E uses the desiccant method at high temperature 100 deg F (37.8 deg C).

- a. Water Vapor Permeance: ASTM E 96/E96M, Procedure E; maximum 0.070 perms (5.2 ng/Pa•s•m<sup>2</sup>).
- b. Elongation: At least 350% per ASTM D 412.

Include Pro Slope with weep hole protector in shower receptor applications to create proper slope and keep weep holes open.

- B. Sloping Materials: Use a sloped fill or a composite made from expanded polystyrene with reinforced fiber cutting template on one side, tapered to 1/4 per foot (20.8 mm/m) slope with weep hole protector.
1. Basis of Design Manufacturer: Noble Company.
  2. Basis of Design Product: Pro-Slope™.
  3. Performance:
    - a. Compressive Deformation Value Test: ASTM D 1621: greater than 500 psf.
- C. Weep Protector: Positive Weep Protector (U.S. Patent #5,022,430), clear rigid PVC, 0.20 inch thick.

1. Basis of Design Manufacturer: Noble Company.
2. Basis of Design Product: Positive Weep Protector.

## 2.2 ACCESSORIES

- A. Mortar Bed:
  1. Portland Cement Mortar (Thickset): ANSI A108.02.
- B. Seam Sealant: Type recommended by sheet membrane manufacturer [**with VOC less than LEED allowable limits**].

For projects required to meet LEED VOC limits, include NobleSealant 150, only.

1. Basis of Design Product: NobleSealant 150.
  2. Basis of Design Product: NobleWeld 100.
- C. Perimeter Sealant: Type recommended by sheet membrane manufacturer [**with VOC less than LEED allowable limits**].

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine [**tile**] [**and**] [**stone**] substrates, including [**walls,**] [**floors,**] [**and**] [**framing**] drains and clamping devices for unacceptable conditions affecting sheet membrane installation.
- B. Examine roughing-in for plumbing piping to verify actual locations of piping connections before sheet membrane installation.
- C. Correct unacceptable conditions before installing sheet membrane.

### 3.2 PREPARATION

- A. Examine, prepare, and test concrete floors for finish flooring installation in accordance with ASTM F 710. Perform one and one alkalinity test for every 2,000 sf (185 sq m). Obtain instructions corrective measures from flooring and adhesive manufacturers when test results are not within specified limits.

Consider requiring more restrictive substrate tolerances when installing large format tile. Verify acceptable limits with tile manufacturer.

1. Surface Tolerance: Maximum variation from plane of 3/16 inch (4.5 mm) in 10 feet (3000 mm).
  2. Alkalinity Range: pH of 7.0 to 9.0.
- B. When tested moisture emission rate exceeds specified maximum, consult manufacturer of thin-set and tile for acceptable mitigation methods and materials.

### 3.3 INSTALLATION

Include this article when sheet membrane is installed on solid substrates including floors and tile backer boards. Include option above only when sheet membrane is installed in steam rooms

- A. Install in accordance with manufacturers instructions for installation of sheet membrane waterproofing.
- B. Overlap sheets minimum **2 inches (50 mm)** shingle fashion in direction of water drainage. Seal joints watertight.
- C. In shower receptor waterproofing applications, turn sheet membrane installed on floors up vertical surfaces minimum **3 inches (75 mm)** higher than flood plane and mechanically fasten to backing or metal studs.
  - 1. Shower Walls: When sheet membrane is turned up and terminated behind backer board, extend minimum **3 inches (75 mm)** above flood plane and fasten to substrate with no penetrations less than **2 inches (50 mm)** above flood plane.
- D. Extend sheet membrane into floor drains. Cut drain opening in sheet membrane and seal to drain body. Apply a bead of sealant between the membrane and drain body. Secure membrane to floor drain with clamping collar.
- E. Seal sheet membrane watertight to items penetrating sheet membrane.
- F. Secure liner to backing or studs with nails, screws, or staples in top 1" of flashed membrane.
  - 1. Install upturn at dam over the top and fasten on outside face.
  - 2. Provide fasteners or sealants recommended by manufacturer to suit application.
  - 3. Protect weep holes in drain from clogging. Place a Positive Weep Protector® (PWP) on the threaded neck of the strainer. Alternatives to keep weep holes open include pea gravel.
  - 4. Install mortar bed over the waterproofing membrane per TCNA recommendations.

### 3.4 FIELD QUALITY CONTROL

Include this article for flood testing floor waterproofing installations, only.

- A. Upon completion of sheet membrane waterproofing installation, plug drains, dam perimeter of waterproofing and fill with water and test per code (or 24 hours)
  - 1. Inspect waterproofing for leaks.
  - 2. Repair leaks and re-test until watertight.
- B. Prepare test and inspection reports. Indicate corrective measures required to make installation watertight.

### 3.5 PROTECTION

- A. Protect sheet membrane from pedestrian and vehicular traffic and prolonged exposure to sunlight.
- B. Keep sheet membrane clean until reinforced mortar bed is installed.

END OF SECTION 093000