

**Supplemental Specification
2017 Standard Specification Book**

SECTION 07105

WATERPROOFING MEMBRANE

Delete Section 07105 and replace with the following:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Waterproofing membrane for concrete surfaces.

1.2 RELATED SECTIONS

- A. Section 03934: Structural Pothole Patching

1.3 REFERENCES

- A. ASTM D 5: Penetration of Bituminous Materials
- B. ASTM D 36: Softening Point of Bitumen (Ring-and-Ball Apparatus)
- C. ASTM D 146: Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing
- D. ASTM D 882: Tensile Properties of Thin Plastic Sheeting
- E. ASTM D 3236: Apparent Viscosity of Hot Melt Adhesives and Coating Materials
- F. ASTM E 96: Water Vapor Transmission of Materials
- G. ASTM E 154: Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.4 DEFINITIONS **Not Used**

1.5 SUBMITTALS

- A. Manufacturer's product data sheets and recommended installation instructions.

1.6 WEATHER LIMITATIONS

- A. Do not work during wet conditions or when the concrete surface or ambient air temperatures are below 50 degrees F.
- B. Do not apply the membrane until it has been a minimum of 12 hours since the concrete surface was wet and is dry per the manufacturer's requirements.

PART 2 PRODUCTS

2.1 RUBBERIZED ASPHALT MEMBRANE

- A. Characteristics
 1. Laminate form
 2. Heat resistant
 3. Self-adhesive surface protected by special release paper
- B. Mechanical Properties – Refer to Table 1:

Table 1

| Mechanical Properties | | |
|---------------------------------------|---|---|
| Property | Value | Method |
| Thickness, inch, minimum | 0.065 | |
| Permeance-Perms, grains/sq ft·hr·inHg | 0.10 | ASTM E 96, Method B |
| Tensile Strength, psi | 50 | ASTM D 882, modified for 1 inch opening |
| Elongation, percent | 75 | ASTM D 882, modified for 1 inch opening |
| Puncture Resistance (Mesh), lb | 200 | ASTM E 154 |
| Pliability, at -15 degrees F | No cracks in mesh or rubberized asphalt when bent 180 degrees over a ¼ inch mandrel | ASTM D 146 |

2.2 FIBERGLASS MATTING

- A. Weight = 1.5 lb/yd²

2.3 BINDER

- A. Compatible with the matting material and conforming to the following requirements:

Table 2

| Binder Requirements | | |
|-------------------------------|---------------|-------------|
| Property | Value | Method |
| Penetration, 0.1 mm | 40-82 | ASTM D 5 |
| Softening point, min. | 155 degrees F | ASTM D 36 |
| 380 degrees F. viscosity, cps | 1,000 – 1,800 | ASTM D 3236 |

PART 3 EXECUTION

3.1 PREPARATION

- A. Expansion Joint Modification and Joint Closure
1. Remove the curing cover materials and dry according to manufacturer's recommendations or 48 hours, whichever is greater after concrete placed at expansion joint modifications and joint closures has cured.
- B. Concrete Surface
1. Sandblast to remove asphalt and all other foreign material from the entire concrete surface and sides of the parapet for a height of 4 inches above the concrete deck.
 2. Vacuum or use compressed air to remove all dust and loose material from the concrete surface.
 3. Remove all sharp ridges and projections that can puncture the membrane.
 4. Patch holes or spalled areas in the concrete deck with patching concrete to provide a flat deck surface. Refer to Section 03934.
- C. Joints and Cracks
1. Bond a 12 inch wide strip of woven fiberglass reinforcing to the concrete surface over cracks and cold joints greater than $\frac{3}{16}$ inch wide using a compatible binder.

3.2 APPLY MEMBRANE

- A. Rubberized asphalt membrane – Follow membrane manufacturer's recommendations for application temperatures, equipment, and procedures.
1. Primer
 - a. Use primer furnished by the manufacturer of membrane material.
 - b. Apply primer to all surfaces to be covered by the membrane according to the manufacturer's recommended procedure and application rate.
 2. Placement
 - a. Overlap prefabricated membrane strips at least 4 inches or as required by the Manufacturer.
 - b. Place joints in a shingling effect so water will drain effectively.
 3. Bonding
 - a. Use hand rollers or other satisfactory pressure apparatus on the membrane to assure firm and uniform contact with the primed surfaces.
 - b. Use a wide tipped torch to cause tackiness if an adhesive is required to create a good seal at joints.
 4. Placement
 - a. Place the membrane on the vertical face of the concrete curb to the height of the finished overlay surfacing plus 1 inch.
 5. Defects
 - a. Protect the entire membrane from developing wrinkles, air bubbles, or other placement defects.
 - b. Patch any torn or cut areas and narrow overlaps using a satisfactory adhesive and a piece of membrane.
 - c. Extend the patch at least 4 inches beyond any defect.
 - d. Bond the patch firmly to the surface.
 6. Traffic
 - a. Allow only necessary rubber tire vehicles on the membrane.
 - b. Do not allow public traffic.
 - c. Maintain the membrane in good condition until covered with pavement.
 7. Preparation for Overlaying
 - a. Apply a bond coat of an acceptable adhesive to the surface of the membrane if required by the membrane manufacturer.

3.3 ASPHALT SURFACING OVERLAY

- A. Do not place overlay surfacing or backfill until the Engineer has inspected the membrane and authorization has been granted.
- B. Do not place the overlay surfacing or backfill until the membrane has cured according to manufacturer's recommendations.
 - 1. Deposit, spread, roll asphalt material, and backfill so the membrane will not be damaged.

END OF SECTION