

## 516 Waterproofing

### 516.1 Description

- (1) This section describes providing rubberized membrane waterproofing and dampproofing on concrete surfaces of structures.

### 516.2 Materials

#### 516.2.1 Dampproofing

- (1) Furnish asphalt dampproofing conforming to [ASTM D449](#) type II and primer conforming to [ASTM D41](#).
- (2) Furnish coal-tar pitch dampproofing conforming to [ASTM D450](#) type I and a primer conforming to [ASTM D43](#).
- (3) Furnish emulsified asphalt dampproofing conforming to [ASTM D1227](#) type II class 1 and a manufacturer-approved primer.

#### 516.2.2 (Vacant)

#### 516.2.3 Rubberized Membrane

- (1) Select the rubberized membrane, primer, and mastic from the [APL](#). Use membrane at least 60 mil thick.

### 516.3 Construction

#### 516.3.1 General

- (1) Do not perform dampproofing and waterproofing in wet weather or if the air temperature or the concrete temperature is below 45 F, unless the engineer specifically allows.
- (2) Do not cure surfaces that require dampproofing or waterproofing with membrane curing material.
- (3) Cure the concrete and finish the concrete surface as specified for concrete surface finish in [502.3.7](#) before applying dampproofing or waterproofing.
- (4) During primer application, ensure the concrete surface is dry and thoroughly clean, free from contaminants, dust, or other loose material.
- (5) Apply at a material temperature that allows uniform application. If required, heat material uniformly in a kettle with an armored thermometer. Do not heat asphalt above 350 F or coal-tar pitch above 250 F.

#### 516.3.2 Dampproofing

- (1) Under the Dampproofing bid item, provide a prime coat and a finish coat of asphalt, coal-tar pitch, or emulsified asphalt.
- (2) Apply a light coating of the primer to the concrete surface after preparation, cleaning, and drying. Apply the primer to thoroughly and uniformly coat the concrete surface. Apply the finish coat after the prime coat cures but is still tacky to the touch.
- (3) Apply asphalt, coal-tar pitch, or emulsified asphalt so that it uniformly and completely covers the primed surface. Use no less than 4 1/2 gallons, for each 100 square feet of surface, of asphalt, coal-tar pitch, or emulsified asphalt.

#### 516.3.3 Rubberized Membrane

- (1) Under the Rubberized Membrane Waterproofing bid item, provide a prime coat, one layer of a preformed rubberized asphalt and plastic film membrane, and cold-applied rubberized asphalt mastic.
- (2) Prime the concrete surfaces with the membrane manufacturer's primer, applied by brush or roller at the rate of 250 to 350 square feet per gallon. Let the primer dry one hour or until tack free. Re-prime primed surfaces not covered within 36 hours. Do not prime dense surfaces like metal, but ensure it is clean, dry, and free of grease, oil, dust, or other contaminants.
- (3) Apply a single layer of membrane to the accepted primed surface. Overlap 9 inches at membrane joints and double cover intersections to eliminate butt joints in the membrane. Chamfer or round the exterior corners.
- (4) Apply a double layer of membrane around drains, posts, bolts, or other protrusions and liberally coat them with mastic next to seams and protrusions after applying the membrane.
- (5) Apply a trowelled bead of cold-applied rubberized asphalt mastic to the perimeter of the membrane placed in any day's operation and to outside edges of membrane after placing the membrane.
- (6) Make a careful inspection of the membrane and patch any ruptures, misaligned seams, or other discontinuities with membrane and place any required backfill material against the membrane. Backfill within 30 days of installation or otherwise protect from ultra violet radiation.

**516.4 Measurement**

- (1) The department will measure Dampproofing by the square yard acceptably completed.
- (2) The department will measure Rubberized Membrane Waterproofing by the square yard acceptably completed, measured as the length of concrete joint sealed times the plan width of membrane with no additional allowance for overlap at joints and intersections.

**516.5 Payment**

- (1) The department will pay for measured quantities at the contract unit price under the following bid items:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
516.0100	Dampproofing	SY
516.0500	Rubberized Membrane Waterproofing	SY

- (2) Payment for Dampproofing and Rubberized Membrane Waterproofing is full compensation for heating materials; for applying prime coats, mastic, and asphalt, coal-tar pitch, or emulsified asphalt; and for placing preformed membrane.