

Mop each coat completely and cover it with a continuous heavy film applied at the rate of 25 pounds per 100 square feet (1.2 kilograms per square meter). Where any breaks or thin spots show in the dampproofed surface after drying, retouch them to secure an even, impervious coating.

After the first coat is thoroughly set—and not less than one hour after its application—apply a second coat.

605.05. METHOD OF MEASUREMENT.

Dampproofing will be measured by area in square yards (square meters) within the lines shown on the Plans or where specified.

605.06. BASIS OF PAYMENT.

Accepted dampproofing, measured as provided above, will be paid for at the contract unit price as follows:

DAMPPROOFING SQUARE YARD (SQUARE METER)

Such payment shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

**SECTION 606
WATERPROOFING**

606.01. DESCRIPTION.

This work shall consist of furnishing materials and placing membrane waterproofing in reasonably close conformity with the dimension as shown on the Plans or established by the Engineer.

The membrane shall be of the type shown on the Plans or as specified and shall be one of the following:

Type A. Two layers of bitumen-treated cotton fabric and four moppings of hot asphalt or coal-tar pitch.

Type B. Three layers of bitumen-treated cotton fabric and four moppings of hot asphalt or coal-tar pitch.

Type C. Two layers of bitumen-treated felt, one middle layer of bitumen-treated cotton fabric, and four moppings of hot asphalt or coal-tar pitch.

Type D. Four layers of bitumen-treated felt, one middle layer of bitumen-treated cotton fabric, and six moppings of hot asphalt or coal-tar pitch.

606.02. MATERIALS.

Materials shall meet the requirements specified in the following Subsections of Section 700 - Materials:

Priming Coat	716.01 & 716.02
Mop Coats	716.03 & 716.04
Asphalt Felt	717.01
Treated Fabric	717.02
Plastic Cement	717.03
Insulating Paper	717.04
Butyl Rubber Membrane	717.05

606.04. CONSTRUCTION METHODS.

- (a) **Preparation of Surface.** On surfaces to be waterproofed, dress off all projections and point up all holes with mortar. Remove the outside film of cement by brushing it with wire brushes and washing it with clean water. Before applying the prime coat, thoroughly clean the surface of dust and loose materials, and make certain the surface is completely dry.

NOTE: Do not apply a priming coat in wet weather or when the temperature is below 35°F (2°C).

- (b) **Priming Surface.** Immediately after the surface is prepared and in proper condition, cover all concrete surfaces requiring waterproofing with a priming coat of asphalt or creosote meeting the requirement of Section 716. Completely cover the surface to be waterproofed with a uniform continuous film of the priming coat.

- (c) **Application.**

NOTE: Do not apply membrane waterproofing when the atmospheric temperature is below 50°F (10°C). Surfaces to be waterproofed shall be dry and clean, and concrete shall be well cured before waterproofing is applied. Before starting, remove any projections that might injure the membrane.

Make sure the waterproofing is free from punctures, pockets, or folds, and that there are no depressions or pockets in the horizontal surfaces of finished waterproofing, which shall be turned into the drainage castings without a break in the membrane. Take special care to make the waterproofing effective along the sides and ends of girders and at stiffeners, gussets, etc. Fill grooves with plastic cement meeting the requirements of these Specifications.

On the surfaces that are vertical or nearly so, lay the strips of cotton fabric or felt vertically, or with the slope. On other surfaces, lay the strips shingle fashion, beginning at the lowest part of the surface to be waterproofed. Allow sufficient cotton fabric or felt for a 6 inch (150 mm) lap or anchorage at the upper edge of the surface to be waterproofed.

If surfaces of concrete or steel come into contact with asphalt waterproofing, give them one coat of asphalt primer before the first mopping of asphalt, or one coat of creosote primer before the first mopping of coal-tar pitch—except where insulation is to be used at expansion joints. Work the primer in well to give a uniform coating. Apply the priming coat approximately 24 hours before applying the waterproofing membrane, and dry it before the first mopping is applied.

Surfaces to be waterproofed are to be mopped in sections. While the first mopping of bitumen is still hot, lay a strip of cotton fabric or felt on the mopping and press it into place.

Apply each mopping thereafter so that it will completely cover and seal the cotton fabric or felt. The amount of bitumen used for each mopping shall be not less than 4 1/2 gallon per 100 square feet (1.8 liters per square meter) of surface.

NOTE: Do not heat asphalt above 350°F (177°C) or coal-tar pitch above 250°F (121°C). Kettles shall be equipped with armored thermometers. Stir the bitumen frequently while heating it.

Start two-ply work by mopping a section of the surface 2 inches (50 mm) wider than half the width of the cotton fabric or felt. On this hot mopping, lay a half width of the cotton fabric or felt. Then mop the top surface of this cotton fabric or felt plus an adjacent section of the surface 2 inches (50 mm) wider than a half width of the cotton or felt. On this mopping, lay a full width of the cotton fabric or felt, completely covering the first strip. Thereafter, lay full widths of the cotton fabric or felt in hot moppings, and in such manner that each strip will lap the second preceding strip by 2 inches (50 mm) and end laps not less than 12 inches (300 mm).

The procedure for three-ply work is the same as for two-ply work, except make the first strip a one-third width of the cotton fabric or felt; make the second strip a two-thirds width; and make the third and succeeding strips full width. Make the second full strip lap the first strip at least 2 inches (50 mm).

Build up membrane waterproofing consisting of more than three-ply in shingle fashion similar to three-ply work by addition of as many ply as required.

Regulate the work so that at the end of the day all fabric or felt that has been laid will have received the final coat of bitumen.

NOTE: Do not patch the work without permission from the Engineer. Where patching is permitted for defective waterproofing, it shall extend at least 12 inches (300 mm) beyond the outermost edge of the defective portion. The second and each succeeding ply of the patch shall extend at least 3 inches (75 mm) beyond the preceding ply.

At construction joints, omit the primer for a width of 18 inches (450 mm) of the surface and lay a strip of insulating paper before applying waterproofing.

Fill expansion joints with plastic cement conforming to these Specifications. Dry and clean joints immediately before they are filled, overfilling them slightly to allow for shrinkage in drying.

606.05. METHOD OF MEASUREMENT.

Measure *waterproofing* of the type specified by the area in square feet (square meters) within the lines shown on the Plans or specified.

606.06. BASIS OF PAYMENT.

Accepted waterproofing, measured as provided above, will be paid for at the contract unit price as follows:

- (A) WATERPROOFING TYPE A SQUARE FEET (SQUARE METERS)
- (B) WATERPROOFING TYPE B SQUARE FEET (SQUARE METERS)
- (C) WATERPROOFING TYPE C SQUARE FEET (SQUARE METERS)
- (D) WATERPROOFING TYPE D SQUARE FEET (SQUARE METERS)

Such payment shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

**SECTION 607
ASPHALT PLANKING**

607.01. DESCRIPTION.

This work shall consist of furnishing materials and placing asphalt plank in reasonably close conformity with the dimensions as shown on the Plans or established by the Engineer.

607.02. MATERIALS.

Materials shall meet the requirements specified in the following Subsections of Section 700 - Materials:

Asphalt	708.03
Asphalt Plank	718.01

607.04. CONSTRUCTION METHODS.

First, protect the surface by coating it with hot asphalt.

NOTE: Not less than 50 pounds of asphalt per 100 square feet (2.4 kilograms of asphalt per square meters) shall be used. Place the planks while this asphalt coating is still hot. Heavily coat the edges of the planks with hot asphalt as they are set. Set the planks as closely together as possible, pushing each one tightly against the previously laid plank in such a manner as to completely fill the joints between the planks with hot asphalt—until you squeeze a small amount of asphalt out of the joints. If any joints are not completely closed after all the planks have been placed, fill them with hot asphalt.

When necessary to cut plank lengthwise or at ends, make the cuts in a professional manner.

607.05. METHOD OF MEASUREMENT.

Measure *asphalt planking* by the area in square feet (square meters).

607.06. BASIS OF PAYMENT.

Accepted asphalt planking, measured as provided above, will be paid for at the Contract unit price as follows:

- ASPHALT PLANKING SQUARE FEET (SQUARE METERS)

Such payment shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.