

529.3.07

If the Coast Guard fails to make its inspection within 30 days, the Department and the utility company will make the final inspection of the navigation lighting system. The Contractor will be relieved of any further responsibility for the system after Department acceptance.

**B. Testing and Acceptance of the Navigation Lighting System**

Final acceptance of the navigation lighting system will be withheld for a testing period of 30 days. The testing will consist of continuous, nightly, automatic operation after the Contractor completes the lighting work or until all other items in the Contract (except grassing) have been accepted, whichever occurs later. Assume the cost of the electrical energy consumed during the testing period.

Correct any defects in materials or workmanship that occur during the testing period at the Contractor’s expense.

Any portion of the testing period (Subsection 529.3.06.B, “Testing Acceptance of the Navigation Lighting System”) that occurs after final acceptance of the other Work will not be charged against the Contract Time.

**529.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

**529.4 Measurement**

Each navigation lighting system completed and accepted at the location specified will be measured for payment on a lump sum basis. See Subsection 529.1, “General Description.”)

**529.4.01 Limits**

General Provisions 101 through 150.

**529.5 Payment**

Each navigation lighting system completed and accepted at the location specified will be paid for at the Lump Sum Price bid for each system. This payment shall be full compensation for furnishing and installing materials and for labor, equipment, and incidentals necessary to complete the Item.

Payment will be made under:

Item No. 529	Navigation lighting, bridge no. _____	Per lump sum
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**529.5.01 Adjustments**

General Provisions 101 through 150.

**Section 530—Waterproofing Fabrics**

**530.1 General Description**

This work consists of waterproofing concrete and other masonry surfaces by preparing and applying a composite waterproofing membrane at locations shown on the Plans.

**530.1.01 Definitions**

General Provisions 101 through 150.

**530.1.02 Related References**

**A. Standard Specifications**

Section 500—Concrete Structures

**B. Referenced Documents**

General Provisions 101 through 150.

**530.1.03 Submittals**

General Provisions 101 through 150.

## 530.2 Materials

Ensure that materials meet the requirements of the following Specifications:

Material	Section
Waterproofing Membrane Material	888.2.03
Mortar	834.2.03

For a list of waterproofing membrane sources, see QPL 22.

### 530.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

## 530.3 Construction Requirements

### 530.3.01 Personnel

General Provisions 101 through 150.

### 530.3.02 Equipment

General Provisions 101 through 150.

### 530.3.03 Preparation

#### A. Prepare the Concrete

Prime the concrete and apply the membrane only under the following conditions:

- Air and concrete temperatures are above 40 °F (4 °C).
- All surfaces are thoroughly dry.
- Concrete is at least 14 days old.

Prepare the concrete as follows:

1. Fill all hole cracks and depressions in the concrete surface flush with mortar composed of one part Portland cement and two parts approved sand and cure according to Subsection 500.3.05.Z, "Cure Concrete."  
The Contractor may use approved, commercially produced, fast setting, no sag grouts to expedite the work.
2. Chip or grind smooth all high spots, sharp points, and edges.
3. Thoroughly clean and dry the concrete surface.

#### B. Prime the Concrete

Prime all areas that will receive membrane and allow the areas to cure according to the manufacturer's recommendations or as directed by the Engineer.

Areas not covered with membrane in 24 hours must be reprimed.

### 530.3.04 Fabrication

General Provisions 101 through 150.

### 530.3.05 Construction

#### A. Seal Openings and Structure Edges

At openings for drains and pipes and at the edges of structures, construct a seal to prevent water from passing between the waterproofing and the surface that it overlays.

Apply a manufacturer-recommended edge seal to any area of the membrane permanently exposed to sunlight.

#### B. Waterproof Joints

Joints require a double thickness of waterproofing membrane over properly sealed expansion, construction, or control joints.

Pre-strip the joint with a 12 in. (300 mm) wide membrane before applying the main waterproofing. The surface of this pre-strip does not need priming.

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**C. Seal Seams**

Edge and end seams must overlap at least 4 in (100 mm) on all applications.

**D. Apply Membrane**

Apply the membrane as follows:

Rub the entire membrane firmly and completely as soon as possible to minimize bubbles caused by air outgassing or water vapor from the concrete.

Slit all fish mouths, overlap the flaps and repair with a patch pressed or rolled to make the seal. Seal the edges with mastic.

Patch misaligned or inadequately lapped seams with the membrane.

**E. Protect Membrane**

When necessary, use a manufacturer-approved protection system to protect waterproofing membranes from damage caused by backfill material or other construction activities.

**F. Repair Membrane**

As soon as possible, patch all tears and inadequately lapped seams with waterproofing membrane.

Slit fish mouths and repair with a patch extending 8 in (200 mm) in all directions from the slit and seal the edges of the patch with mastic.

**530.3.06 Quality Acceptance**

General Provisions 101 through 150.

**530.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

**530.4 Measurement**

This work will be measured for payment in square yards (meters) of accepted waterproofing.

**530.4.01 Limits**

General Provisions 101 through 150.

**530.5 Payment**

This work will be paid for at the Contract Price per square yard (meter) for waterproofing complete in place.

Payment will be made under:

Item No. 530	Waterproofing	Per square yard (meter)
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**530.5.01 Adjustments**

General Provisions 101 through 150.

**Section 531—Dampproofing**

**531.1 General Description**

This work consists of dampproofing concrete and other types of masonry surfaces.

**531.1.01 Definitions**

General Provisions 101 through 150.

**531.1.02 Related References**

**A. Standard Specifications**

General Provisions 101 through 150.