

SECTION 459

BITUMEN COATING AND POLYETHYLENE SHEETING ON CONCRETE PILES

459-1 Description.

Furnish and apply bituminous coating and primer, or install polyethylene sheeting and lubricant to prestressed concrete piles.

459-2 Materials.

459-2.1 Bituminous Coating: Use an asphalt type bituminous coating meeting the requirements of Section 916, with a minimum viscosity (at 140°F [60°C]) of 3,000 poises [300 Pa·s] and a maximum of 1,000 poises [100 Pa·s]. Apply bituminous coating uniformly over an asphalt primer.

459-2.2 Primer: Meet the requirements of ASTM D 41.

459-2.3 Polyethylene Sheeting: Use polyethylene sheeting that is 6 mils [0.15 mm] thick and is clean, new and has a smooth surface.

459-2.4 Lubricant: Use a lubricant between the two layers of sheeting that is either a vegetable oil or other approved environmentally and functionally acceptable lubricant.

459-3 Construction Requirements.

Before surfaces are coated with bitumen, dry and thoroughly clean them of dust and loose materials. Do not apply primer or bitumen in wet weather or when the temperature is below 65°F [18°C].

Apply the primer to the surfaces and allow it to dry completely before applying the bituminous coating. Apply primer uniformly at the quantity of 1 gal/100 ft² [0.4075 L/m²] of surface.

Apply bitumen uniformly at a temperature of not less than 300°F [150°C], or more than 350°F [175°C], and apply either by mopping, brushing, or spraying at the project site. Completely fill all holes or depressions in the concrete surface with bitumen. Apply the bituminous coating to a minimum dry thickness of 1/8 inch [3 mm], but not less than 8 gal/100 ft² [3.25 L/m²].

Store bitumen coated piles before driving, and protect piles from sunlight and heat. Ensure that pile coatings are not damaged during storage, hauling, or handling. Take appropriate measures to preserve and maintain the bitumen coating. At the time of pile driving, ensure that the bitumen coating has a minimum dry thickness of 1/8 inch [3 mm]. If necessary, recoat the piles, at no cost to the Department, to comply with the requirements of this Section.

Ensure that all surfaces to be wrapped with polyethylene sheeting are dry and thoroughly cleaned of dust and loose materials.

Place the sheeting on the pile to the limits shown on the plans. Wrap the pile with a minimum of 2 1/4 wraps of sheeting. Apply a uniform coating of a lubricant between the first and the second layers. Ensure that this coating fully covers the entire surface of the first layer of sheeting. Once the pile has been wrapped with the minimum of 2 1/4 wraps of sheeting, secure the sheeting with tape or other means that does not damage the sheeting or restrict its movement. Do not place any tape or other material other than the lubricant between the first and second layers of sheeting. Protect the sheeting from construction damage. Where sheeting has been damaged, completely remove the damaged sheet of polyethylene and replace it, at no cost to the Department, as directed by the Engineer.

Where the sheeting will not wrap the specified limits of the pile in one sheet, overlap the previous sheet with each subsequent sheet by 12 inches [300 mm].

459-4 Method of Measurement.

459-4.1 Bitumen Coating: The quantity will be paid for by the square yard [square meter] of coating in place on concrete pile surfaces.

459-4.2 Polyethylene Sheeting: The quantity will be paid for by the square yard [square meter] of wrapped concrete pile surfaces.

459-5 Basis of Payment.

459-5.1 Bitumen Coating: Price and payment will be full compensation for all work specified in this Section, including furnishing all labor, materials, tools, equipment, and incidentals, and doing all the work involved in applying the bituminous coating and primer, as specified in the Contract Documents.

459-5.2 Polyethylene Sheeting: Price and payment will be full compensation for furnishing all labor, materials, including primer and lubricant, tools, equipment, and incidentals, and for doing all the work involved in installing the polyethylene sheeting and lubricant, as specified in the Contract Documents.

459-5.3 Payment Items: Payment will be made under:

Item No. 459- 70-	Bitumen Coating on Concrete Piles - per square yard.
Item No. 2459- 70-	Bitumen Coating on Concrete Piles - per square meter.
Item No. 459- 71-	Polyethylene Sheeting on Concrete Piles - per square yard.
Item No. 2459- 71-	Polyethylene Sheeting on Concrete Piles - per square meter.