

## ITEM 643 POLYESTER PAVEMENT MARKING

### 643.01 Description

### 643.02 Materials

### 643.03 Equipment

### 643.04 Application

### 643.05 Basis of Payment

**643.01 Description.** This work consists of furnishing and applying polyester pavement markings according to Item 641, 740.01, 740.03, 740.09, and the additional requirements specified below.

**643.02 Materials.** Furnish materials from the City's QPL conforming to:

Polyester Pavement Marking.....	740.03
Glass Beads, Type B .....	740.09

The Engineer may obtain random samples from the application equipment. Furnish the manufacturer's identification information for the sampled liquid materials. The City will test the quality assurance sample for conformance to the manufacturer's production ranges. For samples not meeting the manufacturer's production ranges, re-apply, at no cost to the City, all markings using that sample. The City will consider all other untested batches to be not approved materials and will either require testing or re-application.

Do not apply material that have exceeded the manufacturer's shelf life. Do not use glass beads that are wet.

**643.03 Equipment.** Use application equipment capable of mixing the polyester components in proportions recommended by the manufacturer and applying glass beads at the time of marking placement. Use equipment (striper) capable of applying polyester long-lines at the thickness specified for solid and broken lines while moving on the highway at a speed of not less than 7 miles per hour (11 km/h). Furnish a calibrated measuring device acceptable to the Engineer to measure the polyester resin in the striper tanks.

Equip all striping equipment for center line, lane line and edge line markings with a computerized Data Logging System (DLS) conforming to 641.04 when the length of marking exceeds 0.5 miles (0.8 km) of continuous line equivalent. The DLS shall measure the polyester resin material component and glass beads only. Calculate catalyst as 2 percent of the resin used.

Furnish written documentation to the Engineer for the equipment's operational capabilities from the equipment manufacturer.

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**643.04 Application.** Apply polyester only when the pavement surface is clean and dry and the pavement and air temperature are above 50 °F (10 °C).

If project safety requirements require marking application below 50°F (10°C), obtain approval from the Engineer and apply cold weather traffic paint, Type 1A, according to Item 642 instead of the polyester.

**643.05**

After sampling of resin is completed, transfer the entire contents of each material container to the striper tanks. Ensure that the polyester is thoroughly mixed at all times during application. Apply polyester (catalyst plus resin) uniformly to the pavement at the following rates:

15 Mil Thickness	Line Width (inch)				
	4	5	10	20	24
	Gallon per Mile of Line				
Solid Line	16	20	40	80	96
Broken Line	4	5	10	20	24
Dotted Line	4	5	10	20	24
Areas, Symbols, Words	0.94 gallon per 100 square feet				

0.38 mm Thickness	Line Width (mm)				
	100	127	254	508	600
	Liter per Kilometer of Line				
Solid Line	37	46.5	93	186	222
Broken Line	9.3	11.65	23.3	46.6	56
Dotted Line	9.3	11.65	23.3	46.6	56
Areas, Symbols, Words	0.38 L/m <sup>2</sup>				

Do not dilute the material.

Apply glass beads to the uncured polyester in sufficient quantity so that the beads completely fill the polyester film from the film-pavement interface to the top surface of the film to the extent that there are loose beads on the surface of the uncured line. Apply glass beads at a minimum rate of 16.5 pounds per 100 square feet (8 kg per 10 m<sup>2</sup>) of polyester applied in a manner that provides uniformly retroreflective lines.

If the applied polyester becomes tacky and causes marking discoloration and darkening, cease marking application until the Engineer agrees that the problem is corrected.

If any marking is in a tracking condition 45 minutes after application, cease marking application until the Inspector agrees that the problem is corrected.

Do not apply polyester pavement markings to new asphalt concrete until at least 2 weeks after the pavement is placed. Ensure curing compound is removed from portland cement concrete pavements.

Replace unsatisfactory markings according to 641.11.

Furnish the Engineer daily, biweekly and final DLS reports according to 641.04.

**643.05 Basis of Payment.** The City will pay for accepted quantities at the contract prices, or prices adjusted according to 641.11, measured according to 641.12, with the provisions specified in 641.13, and as follows:

Item	Unit	Description
643	Mile (Kilometer)	Edge Line
643	Mile (Kilometer)	Lane Line
643	Mile (Kilometer)	Center Line
643	Foot (Meter)	Channelizing Line

643	Foot (Meter)	Stop Line
643	Foot (Meter)	Crosswalk Line
643	Foot (Meter)	Transverse/Diagonal Line
643	Foot (Meter)	Curb Marking
643	Square Foot	Island Marking (Square Meter)
643	Each	Handicap Symbol Marking
643	Each	Railroad Symbol Marking
643	Each	School Symbol Marking, ___ inch (___ mm)
643	Foot (Meter)	Parking Lot Stall Marking
643	Each	Lane Arrow
643	Each	Lane Drop Arrow
643	Each	Word on Pavement, ___ inch (___ mm)
643	Foot (Meter)	Dotted Line, ___ inch (___ mm)
643	Each	Bike Marking
643	Each	Speed Hump Marking
643	Foot or Square Foot	Removal of Pavement Marking (Meter or Square Meter), or Each
643	Lump Sum	Two-Way Radio Equipment