

ITEM 648 SPRAY THERMOPLASTIC PAVEMENT MARKING

648.01 Description

648.02 Materials

648.03 Equipment

648.04 Surface Preparation

648.05 Application

648.06 Basis of Payment

648.01 Description. This work consists of furnishing and applying spray thermoplastic pavement markings according to Item 641, 740.01, 740.09, 740.10, and the additional requirements specified below.

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

Spray Thermoplastic Pavement Marking	740.10
Glass beads, Type C	740.09

The Engineer may obtain random samples from the application equipment. Furnish the manufacturer's identification information for the sampled 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, any 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 has exceeded the manufacturer's shelf life. Do not use glass beads that are wet.

648.03 Equipment. Provide spray thermoplastic pavement marking equipment and documentation as required in 644.03.

Ensure that the application equipment applies lines with a square end and can apply broken lines. Furnish application equipment for applying spray thermoplastic markings that produces different widths of lines.

Use equipment that ensures uniformity in the thickness and width of lines. Use equipment that forms lines 10 inches (200 mm) wide or less by one application pass.

648.04 Surface Preparation. Before applying spray thermoplastic the pavement surfaces must be clean, dust free, and completely dry. Test for moisture using the following test procedures, if needed as directed by the Engineer:

Moisture Test:

1. Tape a 12 inch (300 mm) square sheet of thin plastic to the road surface, sealing all edges.
2. After 15 minutes examine the side of the sheet facing the road surface.
3. If more than a sparse amount of moisture is present, do not apply spray thermoplastic.

Apply spray thermoplastic to new pavement, over existing thermoplastic, or over one application of paint. Do not apply spray thermoplastic over epoxy, polyester, or preformed markings. Remove poorly adhering, flaking and loose markings and curing

648.05

compounds. Use an air blast, or manual or mechanical broom to prepare surfaces. When more effort is needed to obtain a surface free from adhering, flaking and loose markings and curing compounds, use water blasting or mechanical removal.

648.05 Application. If applying spray thermoplastic to pavements that are less than six months old, ensure that both the pavement surface and the ambient air temperature at the time of application are not less than 50 °F (10 °C) and rising. However, if applying thermoplastic to pavements that are older than a year, ensure that both the pavement surface and the ambient air temperature at the time of application are not less than 60 °F (21 °C) and rising. Ensure that the temperature of spray thermoplastic at the point of application is at least 375 °F (204 °C) and not more than 440 °F (227 °C).

Apply spray thermoplastic at a thickness of 45 mil (1.15 mm) at the following rates:

45Mil Thickness	Line Width (inch)			
	4	5	8	10
	Pounds per Mile of Line			
Solid Line	762-886	952.5-1107.5	1524-1772	1905-2215
Broken or Dotted Line	191-222	477-554	381-443	477-554

1.15 mm Thickness	Line Width (mm)			
	100	127	200	254
	Kilogram per Kilometer of Line			
Solid Line	209-242	261-303	417-485	522-606
Broken or Dotted Line	52-61	65.5-76.5	104-121	131-153

Mechanically apply glass beads to the wet spray thermoplastic surface so that the beads are embedded and retained and provide uniform retroreflectivity in the surface. Apply beads at a minimum rate of 10 pounds per 100 square feet (4.9 kg per 10 m²) of spray thermoplastic surface area.

Use primer when required by the manufacturer. Apply primer according to the manufacturer’s recommendations.

For each route section on the DLS report, the Engineer will compute the amount of spray thermoplastic marking material and glass beads applied. The City will reduce the contract price in direct proportion to the percent of deficiency of spray thermoplastic marking material or glass beads as specified in 648.05, up to 20 percent for each material deficiency. The City will only use the greater deficiency of marking material or glass beads to compute the deduction.

If the deficiency of spray thermoplastic marking material or glass beads is 20 percent or more, the City will consider the work unsatisfactory. In addition, the Engineer will consider as unsatisfactory materials applied outside the temperature or application requirements in 648.05 without written approval of the Engineer. Replace spray thermoplastic markings and glass beads in all sections determined to be unsatisfactory by entirely removing the unsatisfactory spray thermoplastic material by grinding according to 641.10 and then reapplying at the full thickness specified in 648.05.

Furnish the Engineer daily, biweekly and final DLS reports conforming to 648.03, and additional reports indicating material type and quantities in pounds (kilograms) of spray thermoplastic materials used, according to 641.04.

648.06 Basis of Payment. The City will not pay for any spray thermoplastic lines that do not meet the required thickness. The City will pay for accepted quantities at the contract prices, or prices adjusted according to 648.05, measured according to 641.12, with the provisions specified in 641.13, and as follows:

Item	Unit	Description
648	Mile (Kilometer)	Edge Line
648	Mile (Kilometer)	Lane Line
648	Mile (Kilometer)	Center Line
648	Foot (Meter)	Channelizing Line
648	Foot (Meter)	Dotted Line, ___ inch (__ mm)
648	Foot or Square Foot (Meter or Square Meter), or Each	Removal of Pavement Marking
648	Lump Sum	Two-Way Radio Equipment