

## SECTION 713 PREFORMED PAVEMENT STRIPES AND MARKINGS

### **713-1 Description.**

Apply preformed reflectorized plastic pavement symbols, legends, stripes and markings, in accordance with the Contract documents and remove traffic stripes and markings as required.

### **713-2 Materials.**

Use only preformed pavement stripes and markings materials listed on the Qualified Products List (QPL), and meet the requirements of 971-1 and 971-18. The Engineer will take random samples of the materials in accordance with the Department's Sampling, Testing and Reporting Guide schedule.

### **713-3 Equipment.**

Use equipment that is mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc.

### **713-4 Application.**

**713-4.1 General:** Apply pavement stripes and markings to the pavement by means approved by the Engineer. The Engineer will conduct field testing in accordance with FM 5-541. Remove and replace pavement stripes and markings not meeting the requirements of this Section at no additional cost to the Department.

Ensure that existing pavement markings are removed, such that scars or traces of removed markings will not conflict with new stripes and markings by a method approved by the Engineer.

Prior to applying pavement stripes and markings, remove any material that would adversely affect the bond of the pavement stripes and markings by a method approved by the Engineer.

Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 55°F [13°C] and rising. Follow the manufacturer's recommendations for application temperature. The Engineer will measure temperatures in accordance with FM 5-541.

Offset longitudinal lines at least 2 inches [50 mm] from construction joints of portland cement concrete pavement.

Apply a primer sealer of the type recommended by the manufacturer of the pavement stripes and markings material on all portland cement concrete surfaces, prior to installation.

Apply traffic stripes or markings, having well defined edges, over existing pavement markings such that not more than 2 inches [50 mm] on either end and not more than 1 inch [25 mm] on either side is visible.

Apply all final pavement markings prior to opening the road to traffic.

**713-4.2 Corrections for Deficiencies:** Remove and reapply a 1.0 mile [1.0 kilometer] LOT centered around any deficiency, as determined by the Engineer, at no additional cost to the Department.

**713-4.3 Thickness:** Apply traffic stripes or markings such that, after installation, the stripes or markings will have a thickness of 0.02 to 0.09 inch [0.508 to 2.286 mm] when measured above the pavement surface at the edge of the traffic stripe or marking.

### **713-5 Retroreflectivity.**

Apply white and yellow pavement stripes and markings that will attain an initial retroreflectance of not less than 300 mcd/lx·m<sup>2</sup> and not less than 250 mcd/lx·m<sup>2</sup>, respectively. Ensure that the intermittent and final retroreflectance of white and yellow pavement markings are not less than 150 mcd/lx·m<sup>2</sup>. This does not apply to transverse lines, bike lane symbols and longitudinal lines adjacent to or in a proposed bike lane.

**713-6 Color.**

Use white pavement stripes and marking material that is pure white, free from any tint and showing no deviations from magnesium oxide color standard greater than the following:

Scale Definition	Magnesium Oxide Standard	Sample
RD	100	75% minimum
Reflectance		
a. Red-Green	0	-5 to +5
b. Yellow-Blue	0	-10 to +10

Use yellow pavement stripes and marking material which visually matches Federal Test Standard Number 595-color 33538, and meet the following criteria for chromaticity coordinates (x,y):

x	0.455	0.510	0.472	0.530
y	0.444	0.485	0.400	0.456

**713-7 Durability.**

Durability is the measured percent of pavement marking material completely removed from the pavement. The pavement marking material line loss must not exceed 5.0% of surface area.

**713-8 Contractor's Responsibility for Notification.**

Notify the Engineer prior to the placement of pavement stripes and marking material. Furnish the Engineer with the manufacturer's name and LOT numbers of the material to be used. Ensure that the approved LOT numbers appear on the material packages. Submit a certified test report to the Engineer indicating that the materials meet all requirements specified.

**713-9 Protection of Newly Applied Stripes.**

Do not allow traffic onto newly applied traffic stripes and markings until they are sufficiently attached to permit vehicles to cross them without damage. Remove and replace any portion of the traffic stripes and markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

**713-10 Basis of Payment.**

When preformed pavement stripes and markings are used as an alternate to extruded or sprayed thermoplastic traffic stripes and markings, the quantities will be paid for in accordance with Section 711. Such prices and payments will be full compensation for all work specified herein. Final Payment will be withheld until all deficiencies are corrected.