

780061XX PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
78004XXX PREFORMED PLASTIC PAVEMENT MARKING, TYPE D (LCDOT)

This special provision is for use on the annual LCDOT pavement marking replacement contract. Do not include on other projects without prior approval of LCDOT Traffic. Delete this note from the Contract Specifications.

Effective: November 15, 2018

Revised: October 13, 2022

Description: This work shall consist of furnishing and applying preformed thermoplastic and preformed plastic contrast pavement markings (white/yellow with black edging).

Materials: The materials shall be according to Article 780.02 of the "Standard Specifications" and the following:

Preformed Thermoplastic Pavement Marking:

The preformed thermoplastic markings shall consist of a white contrast marking (white with black edging) that has nighttime reflectivity and is skid resistant. The black contrasting border shall be a minimum of 1.5" for 4", 5" & 6" lines and letters & symbols. The contrasting border shall be a minimum of 3" for lines 8" wide and greater. Contractors may elect to include wider contrast with the Engineer's approval.

Preformed Plastic Pavement Marking, Type D:

The preformed patterned markings shall consist a white contrast tape (white with black edging) or a yellow non-contrast tape (no black edging) that has a wet retroreflective media incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. The pavement marking shall be manufactured without the use of heavy metals including lead chromate pigments or other similar, lead-containing chemicals.

The white and yellow preformed plastic pavement markings shall meet the Type B requirements of Article 1095.03 (b), (c), (d), (e), (i), (l), (m), (n) and the following:

(a) Composition: The pliant polymer pavement markings shall consist of a mixture of high-quality polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a layer of wet retroreflective media bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 40% ± 10% of the surface area raised and presenting a near vertical face to traffic from any direction. The channels between the raised areas shall be substantially free of exposed beads or particles.

(b) Retroreflectance: The white and yellow markings shall meet the following for initial dry and wet retroreflectance.

(1) *Dry Retroreflectance:* Dry retroreflectance shall be measured under dry conditions according to ASTM D4061 and meet the values described in Article 1095.03(l) for Type B.

(2) *Wet Retroreflectance:* Wet retroreflectance shall be measured under wet conditions according to ASTM E2177 and meet the values shown in the following table.

Wet Retroreflectance, Initial R_L

Color	R_L 1.05/88.76
White	300
Yellow	200

(c) *Color:* The material shall meet the following requirements for daylight reflectance and color, when tested, using a color spectrophotometer with 45 degrees circumferential/zero degree geometry, illuminant D65, and a two degree observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm.

Color	Daylight Reflectance %Y
White	65 min
*Yellow	36-59

*Shall match Federal 595 Color No. 33538 and the chromaticity limits as follows.

<i>x</i>	0.490	0.475	0.485	0.530
<i>y</i>	0.470	0.438	0.425	0.456

(d) *Sampling, Testing, Acceptance, and Certification.* Prior to approval and use of the preformed pavement marking materials, the manufacturer shall submit a notarized certification from an independent laboratory, together with the results of all tests, stating that the material meets the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer’s name, and date of manufacture.

After approval by the Engineer, samples and certification by the manufacturer shall be submitted for each batch used. The manufacturer shall submit a certification stating that the material meets the requirements as set forth herein and is essentially identical to the material sent for qualification. The certification shall state the lot tested, manufacturer’s name, and date of manufacture.

General: Apply the grooved pavement markings according to Section 780 of the “Standard Specifications” and the following:

Preformed Thermoplastic Pavement Marking:

While the thermoplastic material is still melted, the Contractor shall uniformly apply additional glass beads (15% by volume). The timing and distribution of the glass beads shall be solely at the direction of the Engineer.

Preformed Plastic Pavement Marking, Type D:

Apply the wet reflective pavement marking tape when both the air and surface temperature are 40 degrees F and rising.

The markings shall be capable of being applied in a grooved slot on new and existing portland cement concrete and HMA surfaces, by means of a pressure-sensitive, pre-coated adhesive, or liquid contact cement which shall be applied at the time of installation. A primer sealer shall be applied with a roller and shall cover and seal the entire bottom of the groove.

The primer sealer shall be recommended by the manufacturer of the pavement marking material and shall be compatible with the material being used. If manufacturer's recommendations require surface preparation adhesive:

- *Apply SPA-60 during May 1 to September 30, both dates inclusive due to Volatile Organic Compound Limitations.*
- *Apply P-50 during October 1 to April 30, both dates inclusive.*

The Contractor shall install the markings in the groove as soon as possible after the primer sealer cures according to the manufacturer's recommendations. The markings placed in the groove shall be rolled and tamped into the groove with a roller or tamper cart cut to fit the groove and loaded with or weighing at least 200 lb. Vehicle tires shall not be used for tamping. The Contractor shall roll and tamp the material with a minimum of 6 passes (3 cycles) to prevent easy removal or peeling.

Care shall be taken to cut the material in and around pavement joints or cracks and roll the material into the cracks of joints. The Contractor shall arrange to have a manufacturer's representative on-site during all installations of the preformed plastic pavement markings.

Inspection: The grooved pavement markings will be inspected by the Engineer according to Article 780.12 of the "Standard Specifications" and the following:

In the event the Contractor requires and receives from the subcontractor a third party "performance" bond it shall name LCDOT as the obligee and shall be in the full amount of all pavement marking quantities listed in the contract, multiplied by the contract unit price.

Method of Measurement: Lines will be measured for payment in place in feet. Double yellow lines will be measured as two separate lines.

Words and symbols shall conform to the sizes and dimensions specified in the Illinois Manual on Uniform Traffic Control Devices and IDOT standard 780001. They will be measured based on the total areas indicated in Table 1 of Section 780 of the "Standard Specifications", or as shown on the plans.

Basis of Payment: This work will be paid for at the contract unit price per foot of applied line width, as specified, for PREFORMED THERMOPLASTIC PAVEMENT MARKING – LINE or PREFORMED PLASTIC PAVEMENT MARKING, TYPE D – LINE of the width specified; and/or per square foot of applied letters and symbols, as specified, for PREFORMED THERMOPLASTIC PAVEMENT MARKING – LETTERS AND SYMBOLS or PREFORMED PLASTIC PAVEMENT MARKING, TYPE D – LETTERS AND SYMBOLS. *The unit price shall include all equipment, materials and labor required to furnish and install the pavement markings and associated black edging. Contractors may elect to include wider contrast with the Engineer's approval. No additional payment will be allowed for the extra contrast. The grooving will be paid for as GROOVING FOR RECESSED PAVEMENT MARKING of the groove width specified; and/or per square foot for GROOVING FOR RECESSED PAVEMENT MARKING, LETTERS AND SYMBOLS.*