

ITEM 687.0501--25 - DURABLE, WET RETROREFLECTIVE, PREFORMED, PATTERNED PAVEMENT MAKINGS, LF

1. DESCRIPTION:

- 1.01 This work shall consist of furnishing and installing durable, wet retroreflective, preformed, patterned pavement markings in accordance with this specification and as shown on the plans.

2. MATERIALS:

- 2.01 The pavement markings shall consist of white tape with clear microcrystalline ceramic beads incorporated to provide immediate and continuing retroreflection during both wet and dry conditions. This tape shall be manufactured without the use of lead chromate pigments or other similar lead-containing chemicals and shall be 3M Series 380WR-ES or approved equal.
- 2.02 The white tape shall consist of a mixture of high quality, polymeric materials, pigments and glass beads distributed throughout its base cross-sectional area, with a reflective layer of microcrystalline ceramic beads bonded to a durable polyurethane topcoat surface. The patterned surface shall have approximately 50% \pm 15% of the surface area raised and presenting a near vertical face (\exists angle of 0° to 60° in the diagram in the attached drawing) to traffic from either direction. The channels between the raised areas shall be substantially clear of exposed beads or particles.
- 2.03 The markings shall have the initial expected retroreflective values shown in Table 1. The photometric quantity to be measured shall be the coefficient of retroreflected luminance (R_L) and shall be expressed as millicandelas per square foot per foot-candle. Retroreflective values shall be measured: 1) under dry conditions in accordance with the testing procedures of ASTM D4061; 2) under wet conditions in accordance with ASTM E2176 or ASTM E2177 and 3) under “conditions of continuous wetting” (simulated rain) in accordance with ASTM E2176.

TABLE 1		
Expected R_L under dry, wet and rainy conditions		
FACTORS	DRY	WET & RAINY
Entrance Angle*	88.76°	88.76°
Observation Angle*	1.05°	1.05°
Retroreflective Luminance $R_L [(mcd \times ft^{-2}) \times fc^{-1}]$	300	250

* Angles represent a simulated driver viewing geometry at a 100' distance.

- 2.04 To insure greater adhesiveness of the tape, 3M Primer P-50 or approved equal shall be applied to the receiving surface prior to installing the tape.

3. CONSTRUCTION DETAILS:

- 3.01 All pavement surfaces (bituminous or Portland Cement concrete) shall be clean and free of any debris. A seven (7) inch wide groove, 100 mils deep shall be milled for a length and at a location shown on the plans. All milling material shall be removed from the groove. The Contractor shall apply the required primer and install the six (6) inch wide tape per manufacturer's instructions.

ITEM 687.0501--25 - DURABLE, WET RETROREFLECTIVE, PREFORMED, PATTERNED PAVEMENT MAKINGS, LF

4. METHOD OF MEASUREMENT:

- 4.01 Pavement markings will be measured in linear feet along the centerline of the pavement stripe and will be based on a six (6) inch wide stripe. Measurement for markings with a width greater or lesser than the basic six (6) inches, as shown on the plans or as directed by the Engineer, will be made calculating payment length using the following method:

$$\frac{\text{Plan Width for Markings (inches)} \times \text{Linear Feet Measured}}{6 \text{ inches}}$$

5. BASIS OF PAYMENT:

- 5.01 Pavement markings will be paid as the number of linear feet of durable, wet retroreflective performed patterned markings applied to the pavement.