

TIP# U-4008  
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82

**POLICE**

**DESCRIPTION.**

Furnish Police Officers and marked Police Vehicles to direct traffic in accordance with the plans and specifications.

**CONSTRUCTION METHODS.**

Utilize Police Officers who are outfitted with police uniforms.

Utilize marked Police Vehicles, which are equipped with police lights mounted on top of the vehicle, and police vehicle emblems.

Utilize Police Officers and marked Police Vehicles to direct or control traffic as required by the plans or by the Engineer.

**METHOD OF MEASUREMENT.**

The quantity of Police Officers and marked Police Vehicles to be paid for will be the actual number of hours that each Police Officer/marked Police Vehicle is provided during the life of the project as approved by the Engineer.

There will be no direct payment for marked Police Vehicles as they are considered incidental to the pay item in this special provision.

**BASIS OF PAYMENT.**

The quantity of Police Officers and marked Police Vehicles measured as provided above, will be paid for at the contract unit price per hour for "Police".

Payment will be made under:

Police.....Hour

PROJECT SPECIAL PROVISION  
POLYUREA PAVEMENT MARKING MATERIAL  
HIGHLY RETROREFLECTIVE ELEMENTS

**Section 1205-1 DESCRIPTION:**

This special provision covers machine applied “Highly Retroreflective” Polyurea pavement marking material with reflective elements. All remaining Articles in Section 1205 shall be as described in the 2002 Standard Specification for Roads and Structures with the exceptions below.

**Section 1205-2 Materials**

**(A) General**

Replace Article (A) with the following:

Use Section 1087-Articles 1, 3, 5 & 6 (General, Color, Packaging for Shipment, and Storage Life) as described in the 2002 Standard Specifications for Roads and Structures. The manufacturer may recommend any remaining information necessary for the placement of “Highly Retroreflective” Polyurea pavement markings.

**(B) Material Qualification**

Replace Article (B) with the following:

Use only “Highly Retroreflective” polyurea pavement markings that have been pre-approved by the Traffic Control Section prior to application. Use retroreflecting elements according to the manufacturer’s recommendations in order to meet the retroreflectivity requirements as stated in Section 1205-3(G)(8) as measured by a LTL 2000, LTL-X or Department approved 30m mobile retroreflectometer.

Furnish a Type 3 Material Certification and Type 4 Material Certification in accordance with Article 106-3 as described in the 2002 Standard Specifications for Roads and Structures.

For more information, contact the Traffic Control Section at 919 250-4151.

**Section 1205-3 Construction Methods**

Section 1205-3(B) (1) General for all Application Equipment: Add the following sentence after the last paragraph:

Do not use handliners or any other non-truck mounted pavement marking machine to install “Highly Retroreflective” polyurea pavement markings on long-line applications.

Add the following Section immediately following Section 1205-3(G)(8)

**Section 1205-3 (G) (9) “Highly Retroreflective” Polyurea Application:**

Produce “Highly Retroreflective” Polyurea pavement marking lines which have a minimum dry thickness of 20 mils (0.50mm) when placed on concrete and asphalt pavements.

Using the Polyurea application equipment, apply the pavement marking materials simultaneously. Apply the Polyurea resin, mixed at the proper ratio according to the manufacturer recommendations, to the pavement surfaces within the proper application temperatures as determined by the material manufacturer. Inject reflective elements into the molten (liquid) Polyurea pavement markings.

Apply reflective elements according to manufacturer’s recommendation to immediately produce a highly reflective marking.. At the time of installation, provide in-place marking with the minimum reflectance values shown below, as obtained with a LTL 2000, LTL-X or Department approved 30m mobile retroreflectometer. Maintain the retroreflectance values shown below for a minimum of 30 days from the time of placement of marking material.

**WHITE: 800 mcd/lux/m2**

**YELLOW: 500 mcd/lux/m2**

Produce marking, which upon cooling, is uniformly reflectorized and has the ability to resist deformation caused by traffic throughout its entire length.

The manufacturer of the Polyurea pavement marking material shall certify the Contractor to place the material. Provide at least one member of each crew that completed this training. Furnish the Engineer written confirmation of this training from the material manufacturer prior to the beginning of work. The manufacturer’s technical representative shall be onsite during the entire installation of product.

Provide a manufacturer’s technical representative that is knowledgeable and familiar with the Contractors application equipment prior to the installation of the Polyurea pavement markings.

**Section 1205-3(H)(1) Observation Period for “Highly Retroreflective” Polyurea Pavement Markings:**

Replace the first paragraph with the following:

Thermoplastic, epoxy, and polyurea pavement markings are subject to a 180 day observation period.

Add the following just before the last paragraph:

**Provide high visibility polyurea pavement marking materials that maintain minimum retroreflectance values throughout the observation period as follows:**

**WHITE: 700 mcd/lux/m<sup>2</sup>**

**YELLOW: 400 mcd/lux/m<sup>2</sup>**

**In addition to the 180 day observation period, provide high visibility polyurea pavement marking materials that meet the following minimum retroreflectance values after having been snowplowed:**

**WHITE: 375 mcd/lux/m<sup>2</sup>**

**YELLOW: 250 mcd/lux/m<sup>2</sup>**

These measurements will be taken within 30 days prior to the end of the Observation Period. The reflectance values will be taken using a LTL 2000, LTL-X or Department approved 30m mobile retroreflectometer.

**Section 1205-3(I) Removal of Pavement Markings:**

Add the following just before the last paragraph:

Do not apply Polyurea pavement marking over existing pavement marking materials having less adherence than the Polyurea. Remove existing lines according to the manufacturer's recommendations.

**Measurement and Payment:**

Measurement and payment shall be in accordance with Section 1205 of the North Carolina Standard Specifications for Roads and Structures.