**REVISION OF SECTION 627 AND 713**

**METHYL METHACRYLATE PAVEMENT MARKING (INLAID)**

Section 627 of the Standard Specifications is hereby revised for this project as follows:

Subsection 627.11.5 shall be added and include the following:

**Methyl Methacrylate Pavement Marking (Inlaid):** Cross striping pavement marking shall inlaid 30mils and installed per plan. Methyl Methacrylate (MMA) shall be used for cross striping treatment at the designated location in the plans. White MMA with embedded beads shall be installed as shown in the plan detail.

**MMA Specifications**

Area marking shall be a plural-component, liquid-applied Methyl Methacrylate and catalyst consisting of 50% Benzyl Peroxide capable of full cure without external heat sources. Material shall be applied as a single coat system containing glass beads. Binder resins shall be 100% reactive, solvent-free and highly elastic to accommodate various substrate conditions.

The binder shall be 100% reactive, solvent-free, Methacrylate vehicle. Blends with other resins or liquid vehicles shall not be permitted.

This Product shall not contain mercury, lead, hexavalent chromium, toluene, chlorinated solvents, hydrolysable chlorine derivatives, ethylene based glycol ethers and their acetates, nor any carcinogen as defined in 29-CFR 1910.1200. Volatile Organic Content shall be less than 50 Grams per Liter.

The product will be considered to be Lead free if the dry film is tested according to ASTM D3335, and found to have a total Lead concentration of less than 0.06%. The product will be considered to be Chromium free if the dry film is tested according to ASTM D3718 and found to be negative. Pigments shall be first quality Methacrylate grade pigments.

The dry film shall not become classified as a hazardous waste when tested according to EPA Method 1311 Toxicity Characteristic Leaching Procedure for all identified toxic metal concentrations. The bidder shall supply test results and certification that the Methacrylate’s dry film is compliant to the TCLP toxic metal limits for Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, and Selenium.

**MMA Specifications (cont.)**

**Single Coat @ 1mm without Aggregate:**

**Property Method Specification**

 Tensile Strength ASTM D638 14 +/- 0.1 MPa

Elongation at Break Point ASTM D638 78 +/- 7%

Tensile E-Modulus ASTM D638 13.7 +/- 4.2 MPa

Hardness ASTM 2240 15-20 Shore D

Cure Rate 1.5%/50%BPO 20C-=45min. Set Time

Water Absorption 24 hrs @ RT Less than 0.25%

Density ASTM 1475 1.5 kg/m2 @ 1mm

Skid Resistance ASTM E303 SRT Min 45

**-2-**

**REVISION OF SECTION 627 AND 713**

**METHYL METHACRYLATE PAVEMENT MARKING (INLAID)**

**Bead Specifications**

# TT-B Federal Spec. 1325c testing procedures shall be used for testing purposes

Beads shall be transparent, clean, dry, free-flowing, and free from bubbles and foreign matter. Glass Beads shall be free from Carbon Residues.

MMA Type I beads shall contain not less than 85 percent by weight of true spheres above the 50 U.S. Mesh (300 microns) and 80 percent by weight of true spheres below the 50 U.S. Mesh Sieve.

Index of refraction shall be as follows: For Type I beads 1.50 to 1.55.

Specific gravity shall be as follows: For the Type I beads 2.30 to 2.50.

Beads shall pass each sieve series, as specified in table I.

 TABLE I. Gradation, percent by weight, passing

 U.S Sieve No. Microns MMA Type I

 Min Max

 30 Mesh 600 90 100

 50 Mesh 300 0 10

Beads shall not develop any surface haze or dulling when exposed to Acid per testing procedures.

Beads shall not develop any surface haze or dulling when exposed to Calcium Chloride per testing procedures.

A minimum of 100% of the total weight shall be manufactured from a direct melt glass bead, all post consumed glass beads shall be manufactured from North American waste streams.

Coating: T-13, for Methacrylate

Subsection 627.12 shall include the following:

MMA surfacing will be measured by square foot applied and inspected for completed installation of the material. Beads will not be measured or paid for separately but shall be included in the completed installation.

Subsection 627.13 shall include the following:

**Pay Item Pay Unit**

Methyl Methacrylate Pavement Marking (Inlaid) Square Foot

Payment will be full compensation for all work necessary to complete this item including coordination.