

REVISION OF SECTION 106, 627 and 713
GLASS BEADS FOR PAVEMENT MARKING

NOTICE

This is a standard special provision that revises or modifies CDOT's *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT's Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT's Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

Instructions for use on CDOT construction projects:

Use in projects having pavement marking with glass beads.

REVISION OF SECTIONS 106, 627 AND 713
GLASS BEADS FOR PAVEMENT MARKING

Sections 106, 627, and 713 are hereby revised for this project as follows:

Subsection 106.11 shall include the following:

All post consumer and industrial glass beads for pavement marking shall have been manufactured from North American glass waste streams in the United States of America. The bead manufacturer shall submit a COC in accordance with subsection 106.12 confirming that North American glass waste streams were used in the manufacture of the glass beads.

Subsection 627.04 shall include the following:

Glass beads shall be applied into the paint by means of a low pressure, gravity drop bead applicator. In subsection 627.05, seventh paragraph, delete the second sentence and replace with the following:

Glass beads shall be applied into the epoxy pavement marking by means of a low pressure, gravity drop bead applicator.

In subsection 627.05, delete the last paragraph and replace with the following:

Epoxy pavement marking and beads shall be applied within the following limits:

	Application Rate or Coverage Per Gallon of Epoxy Pavement Marking	
	Minimum	Maximum
16 – 18 mil marking	90 sq. ft.	100 sq. ft.
Beads	18 lbs.	20 lbs.

Subsection 627.06 (c) shall include the following:

Glass beads shall be applied into the thermoplastic pavement marking by means of a low pressure, gravity drop bead applicator.

In subsection 713.08, delete the first and third paragraphs and replace with the following:

713.08 Glass Beads for Pavement Marking. Glass beads for pavement marking shall conform to AASHTO M 247, except for the following:

(1) Gradation:

<u>U.S. Mesh</u>	<u>Microns</u>	<u>% Retained</u>
16	1400	0 - 10
18	1000	20 - 35
30	600	50 - 70
50	300	95 - 100

(2) Roundness: All beads shall meet a minimum of 80 percent true spheres in accordance with the Office of Federal Lands Highways FLH T520 or a computerized optical testing method.

(3) Color / Clarity: Beads shall be colorless, clear, and free of carbon residues.

(4) Refractive Index: Minimum 1.51 by oil immersion method.

(5) Air Inclusions: Less than 5 percent by visual count.

(6) Coatings: Per manufacturer’s recommendation for optimum adhesion and embedment.

REVISION OF SECTIONS 106, 627 AND 713
GLASS BEADS FOR PAVEMENT MARKING

- (7) Chemical Resistance: Beads shall be resistant to hydrochloric acid, water, calcium chloride, and sodium sulfide as tested per methods outlined in sections 4.3.6 to 4.3.9 of the TT-B Federal Spec.1325D.
- (8) A minimum of 40 percent of the total weight shall be manufactured using a molten kiln direct melt method. All molten kiln direct melt glass beads shall be above the 600 μm (#30) sieve.
- (9) Glass beads used for any type of pavement marking shall not contain more than 75 parts per million (ppm) arsenic, 75 ppm antimony and 100 ppm lead, as tested in accordance with EPA methods 3052 and 6010C, or other approved testing method