Section 4184. Reflectorizing Spheres for Traffic Paint

4184.01 DESCRIPTION.

A. This specification covers two types of glass spheres, dual coated and uncoated, for the production of reflectorized pavement markings.
- Waterborne and VOC compliant solvent borne traffic paint: use dual coated beads (silicone and silane).
- Epoxy pavement markings: use silicone only coated beads (no silane).

B. The glass beads shall not exhibit a characteristic of toxicity, relative to heavy metals. Glass beads shall not contain more than 200 ppm total of lead, antimony, or arsenic. Manufacturer shall provide a certificate of analysis stating total lead, antimony, and arsenic content for each batch of glass beads supplied. Use transparent, clear, colorless glass spheres that are:
- Free from milkiness, dark particles, and excessive air inclusions.
- Essentially clear from surface scarring or scratching.
- Free of hard lumps and clusters
- Readily dispensed under any conditions suitable for paint striping.

4184.02 SPECIFIC REQUIREMENTS.

A. Gradation.
Meet the gradation requirements of Table 4184.02-1.

Table 4184.02-1: Gradation Requirements (Glass Spheres)

Sieve Size	Percent Passing
16 (1180 µm)	100
20 (850 µm)	90-100
30 (600 µm)	50-75
40 (425 µm)	15-45
50 (300 µm)	0-15

B. Roundness.
Minimum of 80% true spheres.

C. Refractive Index.
Minimum refractive index of 1.50.

D. Properties of Dual Coated Spheres.

1. Coated with a dual coating that has both a moisture resistant silicone coating and an adhesion promoting silane coating.

2. Passes the moisture resistance test and the adherence coating test.

E. Properties of Silicone Coated Spheres.

1. Coated only with a silicone coating (no silane).

2. Passes the moisture resistance test and test negative for the adherence coating test.

4184.03 METHODS OF TEST.

Test the specific requirements according to Office of Materials Test Method No. Iowa 814.