STATE OF OHIO DEPARTMENT OF TRANSPORTATION

SUPPLEMENT 1008 METHOD OF TEST FOR GLASS BEADS (740.10 and Special Gradations)

April 15, 2005

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1008.01 Types.

- 1. 740.10, Type A, paint glass beads
- 2. 740.10, Type B, polyester glass beads
- 3. 740.10, Type C, thermoplastic glass beads
- 4. 740.10, Type D, epoxy glass beads

a. Size I: sieve nos. 10 through 20 (2.00 mm through 850 um) b. Size II: sieve nos. 20 through 100 (850 um through 150 um)

5. Special gradations.

1008.02 Apparatus.

1. Analytical balance, accurate to 0.0004 oz (.01 g)

2. Sample splitters

a. 16-to-1: b. 1:1

Sepor, model unknown

- 3. Ro-tap Mechanical shaker
- 4. Roundometer: Potters, #33
- 5. Sieves:

a. 8-inch (200-mm), half- and full-height, stainless steel frame & mesh, sieve nos. 20, 30, 50 and 100 purchased from & verified to ASTM E 11 by VWR Co.

b. The remainder are 8-inch (200-mm), half- and full-height, stainless steel frame & mesh, purchased from & verified to ASTM E 11 by Gilson Co. (Mfg. By ATM).

1008.03 Sampling. ASTM D 1214, Sieve Analysis of Glass Spheres, Section 5. Sample.

1. <u>Paint, polyester, thermoplastic & epoxy size II beads.</u> Obtain one representative sample of approximately 1 gallon (4 liters), or 1 quart (1 liter) by means of a 16 to 1 riffle sampler, from three bags, each from randomly selected racks, constituting a 44, 000 lb (20,000 kg) shipment of 22 racks. From the 1-gallon (4 liter) or 1 quart (1-liter) sample, obtain an approximately 1.76 oz (50-gram) test sample by means of a sand splitter. Use the test sample on an as-received basis, unless noticeably damp.

2. <u>Epoxy size I beads and gradations coarser than thermoplastic beads.</u> Obtain one representative sample of approximately 1 gallon (4 liters), or 1 quart (1 liter) by means of a 16 to 1 riffle sampler, from two bags, each from randomly selected racks, for each 10,000 lbs.(4500 kg) shipment of five racks. From the 1-gallon (4-liter) or 1 quart (1 liter) sample, obtain an approximately 1.76 oz (50-gram) test sample by means of a sand splitter. Use the test sample on an as-received basis, unless noticeably damp.

1008.04 Sieve analysis.

1. Place the test sample on the top-most sieve of the stack and put the sieve stack in the Ro-Tap. Mechanically sieve for 15 minutes.

2. Proceed as in ASTM D 1214, Section 7.1.2.

3. Weigh and record the weight of the contents of each sieve to the nearest 0.0004 oz (0.01 gram).

1008.05 Calculations.

1. Paint & polyester beads: calculate the total percent passing each sieve, expressed to the nearest 0.1 percent. 2. Thermoplastic & epoxy sizes I & II: calculate the total percent retained for each sieve, expressed to the nearest 0.1 percent.

3. Special: as required to the nearest 0.1 percent.

1008.06 Roundness of Glass Beads. ASTM D 1155, Procedure A, shall be utilized to determine compliance.

- 1. In all cases, final inspection of the rounds & unrounds by microscope will show 95+% separation if properly separated.
- 2. Paint & polyester beads: only the contents of the No. 50 & 100 sieves (300 um & 150 um) are tested.
- nominal elevation of the vibrating table in order to properly separate the beads.

3. Thermoplastic: only the contents of the No. 40 & 50 sieves (425 um & 300 um) are tested. - nominal elevation of the vibrating table: sieve no. position as designated by the Roundometer

4. Epoxy: size I & size II

- nominal elevation of the vibrating table in order to properly separate the beads.

5. Special gradations: only the contents of the sieves are tested which contain the majority of the mass of beads

-elevation of the vibrating table: sieve no. position as designated by the Roundometer

1008.07 Coatings of Glass Beads.

1. AASHTO M 247 shall be used to determine compliance

- a. Paint, moisture-proof, section 4.5
- b. Polyester, 50:50 mix of moisture-proof: floatation, section 4.6, only.
- 2. Thermoplastic, epoxy and special beads as required.