

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

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

October 21, 2005

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1008.01 Types.

1. 740.09, Type A, paint glass beads
2. 740.09, Type B, polyester glass beads
3. 740.09, Type C, thermoplastic glass beads
4. 740.09, Type D, epoxy glass beads
 - a. Size I: sieve nos. 10 through 20 (2.00 mm through 850 μ m)
 - b. Size II: sieve nos. 20 through 100 (850 μ m through 150 μ m)
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 and mesh, sieve nos. 20, 30, 50 and 100 purchased from and verified to ASTM E 11 by VWR Co.
 - b. The remainder are 8 inch (200 mm), half- and full-height, stainless steel frame and mesh, purchased from and 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. Paint, polyester, thermoplastic and epoxy size II beads. 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. Epoxy size I beads and gradations coarser than thermoplastic beads. 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 and polyester beads: calculate the total percent passing each sieve, expressed to the nearest 0.1 percent.
2. Thermoplastic and epoxy sizes I and 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 and unrounds by microscope will show 95+% separation if properly separated.
2. Paint and polyester beads: only the contents of the No. 50 & 100 sieves (300 μ m & 150 μ m) 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 μ m & 300 μ m) are tested.
 - nominal elevation of the vibrating table: sieve no. position as designated by the Roundometer.
4. Epoxy: size I and 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.