

(INACTIVE)

**OHD L-12
METHOD OF TEST FOR
CRUSHING RESISTANCE OF GLASS BEADS**

- I. **SCOPE.** This method of test is intended for the determination of the physical stability of glass beads, such as are used for reflectorizing highway traffic lines, by measurement of their resistance to compression loads.
- II. **APPARATUS.** The apparatus for this test will consist of the following:
- A. **Hydraulic Testing Machine**, similar to that used in unconfined compression tests on soils, operating on air pressure. The air pressure system must be adjustable so that the load increment may be varied.
- NOTE:** The soil test unconfined compression tester U-130 meets the qualifications above.
- B. **Double Proving Ring**, sensitive to 0.1 of a pound (0.05 Kg) with a load limit of 500 pounds (227 Kg).
- C. **Plate Glass or Tool Steel Anvils**, between which the glass beads shall be crushed. The faces of the tool anvils shall have a Rockwell hardness of at least C60. In either case, the faces of the anvils shall be polished and smooth and free of recesses and ridges that would interfere with single point contact with a bead.
- D. **Sieve**, conforming to the Standard Specifications for Sieves for Testing Purposes. (AASHTO M 92.)
- III. **SAMPLE.**
- A. Select and sieve the test sample in accordance with the applicable requirements of the Standard Method of Test for Sieve Analysis of Glass Spheres (ASTM Designation D-1214) and the following paragraphs 1 to 3:
1. Drop-in type beads, ranging in size from 0.009 inches (0.23 mm) to 0.030 inches (0.76 mm) in diameter. Select two size groups for the determination of crushing resistance:
 - a. Beads passing a No. 20 (841 micron) sieve and retained on a No. 30 (595 micron) sieve.
 - b. Beads passing a No. 30 (595 micron) sieve and retained on a No. 40 (420 micron) sieve.
 2. Remove all irregular particles from selected size groups by mechanical separation in accordance with Method of Test for Roundness of Glass Beads (OHD Designation L-10). Use only round beads for test.
 3. Set aside not less than 2 grams of round beads of each selected size range and from this, select beads to be crushed at random without further examination.

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IV. PROCEDURE.

- A. Place a single bead to be crushed between the anvils on the testing device. Apply load, smoothly and evenly, at a rate of approximately 60 pounds (27 Kg) per minute. Stop the application of load when the bead crushes and record the load to the nearest 0.1 of a pound (0.05 Kg). Crush ten (10) beads and calculate the average load for all ten beads.
- B. If, in testing the glass beads, the average of the ten (10) beads fall outside the specification requirements, forty (40) additional beads of the size group under consideration shall be tested and the average of fifty (50) beads shall be calculated.

V. REPORT. The report shall include the following:

- A. Average load in pounds for each size of beads.
- B. Number of beads tested on each run.