

DMS - 8290

GLASS TRAFFIC BEADS

EFFECTIVE DATE: MARCH 2013

8290.1. Description. This Specification governs the materials, composition, quality, sampling and testing, and the Quality Monitoring Program (QMP) for glass traffic beads.

8290.2. Units of Measurements. The values given in parentheses (if provided) are not standard and may not be exact mathematical conversions. Use each system of units separately. Combining values from the two systems may result in nonconformance with the standard.

8290.3. Material Producer List. The Materials and Pavements Section of the Construction Division (CST/M&P) maintains the Material Producer List (MPL) of all materials conforming to the requirements of this Specification. Materials appearing on the MPL, entitled "[Glass Traffic Beads](#)," require no further testing, unless deemed necessary by the Project Engineer or CST/M&P.

8290.4. Qualification Procedure.

- A. Qualification Request.** Submit a written request for evaluation to the Texas Department of Transportation, Construction Division, Materials and Pavements Section (CP51), 125 East 11th Street, Austin, Texas 78701-2483.

Include the following information in the request:

- Company name,
- Physical and mailing addresses,
- Type of material and product designation shown on packaging, and
- Contact person, telephone number, and email address.

- B. Certification.** With the qualification request, submit certifications for the items listed below.

- Certify that the material meets all the requirements of this Specification.
- Certify and ensure that all glass traffic beads meet all federal legislative requirements. Provide certification that all glass traffic beads contain no more than 200 parts per million of arsenic or lead as determined by certified independent (third party) laboratory in accordance with Environmental Protection Agency testing methods 3052, 6010B, or 6010C. Provide an independent certified test report showing compliance with these requirements with the initial qualification request and at the frequency indicated by CST/M&P after approval.
- Certify and include a description of the Quality Control (QC) process used for production or acceptance of the product. The description must indicate which QC tests are performed and at what frequency. CST/M&P will review and approve the QC

process as submitted or ask that a new QC process be submitted if needed. Once approved, the final QC process must be adhered to.

- C. **Qualification Sample.** With the qualification request, submit a 50 lb. (22.7 kg) bag of each type for laboratory testing and evaluation. Include Material Safety Data Sheets with the samples.

Submit all materials for pre-qualification at no cost to the Department.

- D. **Evaluation.** CST/M&P will notify prospective bidders and suppliers after completion of material evaluation.

1. **Qualification.** If approved for Department use, CST/M&P will add the material to the QMP and the MPL.

Report changes in the composition or in the manufacturing process of any material to CST/M&P at the address shown in Section 8290.4.A. The Department will review significant changes reported, and the material may require a re-evaluation.

2. **Failure.** Producers not qualified under this Specification may not furnish materials for Department projects and must show evidence of correction of all deficiencies before reconsideration for qualification.

Testing costs are normally borne by the Department; however, the costs to test materials failing to conform to the requirements of this Specification are borne by the supplier. The Director of CST/M&P will assess this cost at the time of testing.

If the material fails to meet the requirements of this Specification, CST/M&P will not allow resubmission for pre-qualification for 1 year from the date of the original evaluation request or as determined by the Director of CST/M&P.

- E. **Periodic Evaluation.** The Department reserves the right to conduct any tests necessary to evaluate the performance of materials; to verify compliance with this Specification; or to identify a qualified material to determine if there has been a change in the composition, manufacturing process, or quality that may affect its durability or performance. Department representatives may sample material from the manufacturing plant, the project site, and the warehouse. Failure of materials to comply with the requirements of this Specification as a result of periodic evaluation may be cause for removal of those materials from the MPL.

The Department will sample in accordance with Tex-830-B and will test in accordance with the methods listed in Article 8290.7.

- F. **Disqualification.** Causes for disqualification and removal from the MPL include, but are not limited to:

- Material fails to meet the requirements of this Specification,
- Producer fails to report changes in the formulation or production process of the material to CST/M&P, or
- Producer has unpaid charges for failing samples.

- G. Re-Qualification.** A manufacturer or supplier may submit material for re-evaluation after 1 year has elapsed from the date of removal from the MPL or as approved by the Director of CST/M&P. Submit documentation identifying the cause and corrective action taken for review and consideration by the Department.

8290.5. Quality Monitoring Program (QMP).

- A. General.** The manufacturer or provider of traffic beads must have a Department-approved QC process in place to ensure the quality of its product. Maintain records of all test results for a minimum of three years, available for Department review upon request.

The product must also meet the following requirements:

- Be of stable design, i.e., there have been no substantive design changes (changes in composition or manufacturing process) that might affect the quality of the product;
- Be supplied to a Department project at least once every 2 years; and
- Must not have four or more consecutive lots fail any of the material requirements of this Specification.

CST/M&P may remove products not meeting these requirements from the QMP and the MPL.

- B. Sampling.** The sampling frequency will be one 50 lb. (22.7 kg) bag sample per month or other frequency approved by CST/M&P.

A Department representative will perform sampling at the manufacturer's facilities, or as designated by CST/M&P. The Department may also sample from any warehouse or Department project at any time.

- C. Probation.** If an inspected lot does not meet any of the material requirements, CST/M&P will place the product on probation. CST/M&P will inspect all lots during probation.

CST/M&P will reinstate the QM sampling frequency if four consecutive lots meet the material requirements during probation.

- D. Disqualification.** If the Supplier is unable to regain QMP status for any reason, CST/M&P will disqualify the product from the MPL, and all requirements of 8290.4 will apply for re-qualification.

8290.6. Packaging and Labeling.

- A. Packaging.** Provide packaged beads for State requisitions in 50 lb. (22.7 kg) bags constructed as follows or as approved by CST/M&P:

- The bags must have a minimum of five plies, consisting of two plies of minimum 50 lb. (22.7 kg) weight natural Kraft paper, one ply of 0.8 mil (0.02 mm) high-density polyethylene, and two plies of minimum 50 lb. (22.7 kg) weight natural Kraft paper.
- The seams in the bag walls must have strength equal to the paper. The bottom and top seam must be sewn with cotton thread and covered with 90 lb. (40.9 kg) crepe tape, or must be pinch-bottom-style paper bags with glued top and bottom seams.
- The bag must permit no leakage of beads.

Provide beads to Contractors for use on Department projects packaged in 50 lb. (22.7 kg) bags or bulk containers of a mutually agreed upon quality.

B. Labeling. Each container of glass traffic beads must be distinctly marked and show the following:

- Manufacturer/Distributor name;
- “Traffic Beads” and type;
- Purchase order number;
- Identification, such as lot or load number so that the traffic beads may be identified, with quantities not exceeding 48,000 lb. (22,000 kg) in weight; and
- Net weight.

8290.7. Material Requirements.

A. General. Meet all the requirements of AASHTO M 247, except when otherwise specified. In addition, beads must be essentially free of sharp angular particles.

B. Contaminants. Beads must:

- Contain less than 0.25% moisture by weight;
- Be free of trash, dirt, etc.; and
- Show no evidence of objectionable static electricity when flowing through a regular traffic-bead dispenser.

C. Gradation. Beads must meet the gradation requirements of AASHTO M 247 when tested in accordance with ASTM D 7681. Material collected in the pan during sieve analysis must not exceed 2%.

D. Percent Roundness. The beads must have a minimum of 70% true spheres as specified by AASHTO M 247 except for the Type 3 beads, which must have a minimum of 80% true spheres.

E. Adhesion Coating. Type 3 beads must come supplied with an adhesion coating that will promote adhesion to both waterborne traffic paint and thermoplastic pavement marking material.

8290.8. Archived Versions. Archived versions are available.