DMS-8600
Delineators, Object Markers, and Barrier Reflectors
Effective Date: July 2016

1. DESCRIPTION

This Specification governs the materials, sampling, and testing of delineators, object markers, and barrier reflectors used on concrete traffic barrier, railing, metal beam guard fence (MBGF), or other locations as shown on the plans.

DMS-8300, “Sign Face Materials,” governs the pre-qualification procedure and material requirements for reflective sheeting used on reflector units.

2. 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 “Barrier Reflectors,” require no further sampling and testing before use unless deemed necessary by the Project Engineer or CST/M&P.

3. BIDDERS’ AND SUPPLIERS’ REQUIREMENTS

The Department will only purchase or allow on projects those products listed by producer and product code or designation shown on the MPL.

Use of pre-qualified product does not relieve the Contractor of the responsibility to provide product that meets this Specification. The Department may inspect or test material at any time and reject any material that does not meet the specifications.

4. PRE-QUALIFICATION PROCEDURE

4.1. Pre-Qualification Request. Submit on company letterhead a request for evaluation under DMS-8600 to DMS_Prequal@txdot.gov.

Include the following information in the request:
- company name;
- physical and mailing addresses;
- complete description of the product(s), to include the producer and type of sheeting used;
- contact person, phone number, and email address; and
- test report from an independent laboratory containing test results and certifying compliance of the material with this Specification.

4.2. Pre-Qualification Sample. Ship 10 units of each product to the Texas Department of Transportation, CST/M&P (CP51), 9500 North Lake Creek Parkway, Austin, TX 78717.

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

4.3. Evaluation. CST/M&P will notify prospective bidders and suppliers after completion of material evaluation.
4.3.1. **Qualification.** If approved for Department use, CST/M&P will accept materials meeting the requirements of this Specification to the Quality Monitoring Program (QMP) and will add them to the MPL.

Report changes in the composition or in the manufacturing process of any material to CST/M&P. Significant changes reported by the producer, as determined by the Director of CST/M&P, may require a re-evaluation of performance.

The Department reserves the right to conduct whatever tests it deems necessary to identify a pre-qualified material and determine if there is a change in the composition, manufacturing process, or quality that may affect its durability or performance. In case of variance, the Department’s tests will govern.

4.3.2. **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.

The Department normally bears the costs of sampling and testing; however, the producer will bear the costs associated with materials failing to conform to the requirements of this Specification. The Director of CST/M&P will assess this cost at the time of testing, and amounts due will be billed to the producer.

5. **QUALITY MONITORING (QM) REQUIREMENTS**

5.1. **QM Sample.** To maintain QMP approval status, provide an annual QM sample in accordance with Tex-725-I for each product listed on the MPL. Submit samples at least 1 month before approval status expires to allow sufficient time for testing. Not submitting material on time may cause a delay in posting on the MPL. Provide QM sample quantities at no cost to the Department.

5.2. **Periodic Evaluation.** The Department reserves the right to conduct random sampling and testing of pre-qualified materials to verify performance and Specification compliance and to perform random audits of documentation. Department representatives may sample material from the manufacturing plant, the project site, and the warehouse. Sampling will be in accordance with Tex-725-I.

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. In case of variance, the Department’s tests will govern.

The Department normally bears the costs of sampling and testing; however, the producer will bear the costs associated with materials failing to conform to the requirements of this Specification. The Director of CST/M&P will assess this cost at the time of testing, and amounts due will be billed to the producer.

5.3. **Disqualification.** Causes for disqualification and removal from the QMP may include, but are not limited to:

- falsification of documentation,
- material fails to meet or maintain the requirements stated in this Specification,
- producer fails to report any change in material composition or manufacturing process to CST/M&P,
- producer fails to properly submit annual QM samples to CST/M&P, or
- producer has unpaid charges for failing samples.

Disqualification will only apply to the material type corresponding to the infraction.

CST/M&P will remove disqualified producers from the MPL and will not allow submission of material for re-qualification for 1 year, at the discretion of the Department.

5.4. **Re-Qualification.** Once the disqualification period established by CST/M&P has elapsed, producers disqualified and removed from the QMP and MPL may begin the re-qualification process by submitting a request in accordance with Section 4.1, including additional documentation identifying the cause of the
problem and corrective action taken. The re-qualification process will then follow all subsequent Sections of Article 4.

The Department normally bears the costs of sampling and testing; however, the disqualified producer will bear the costs associated with re-qualification. The Director of CST/M&P will assess this cost at the time of re-evaluation, and amounts due will be billed to the producer.

6. **MATERIAL REQUIREMENTS**

6.1. **General Requirements.**

6.1.1. **Delineators.** Reflector units for delineators must be of the color and size specified in the Delineator and Object Marker (D&OM) **Standard Sheets.** The reflective sheeting must meet the requirements for Type B or Type C reflective sheeting as specified in DMS-8300 and must be listed on the MPL entitled “Sign Face Materials.”

6.1.2. **Object Markers.** Reflector units for object markers must be of the color and type specified in the D&OM **Standard Sheets.** The reflective sheeting used must meet the requirements for Type B or Type C reflective sheeting as specified in DMS-8300 and must be listed on the MPL entitled “Sign Face Materials.”

6.1.3. **Barrier Reflectors.** Reflector units for barrier reflectors must use reflective sheeting meeting the requirements for Type B or Type C reflective sheeting as specified in DMS-8300 and must be listed on the MPL entitled “Sign Face Materials.”

6.2. **Construction Requirements.**

6.2.1. **Delineators.** Reflector units for delineators consist of one or more individual reflectorized units of reflective sheeting. Directly apply reflector units either to the delineator post or to an aluminum backplate conforming to the requirements of ASTM B 209, alloy 6061-T-6, with a minimum thickness of 0.08 in.

6.2.2. **Object Markers.**

6.2.2.1. **Types 1, 3, and 4.** Reflector units for Type 1, 3, and 4 object markers consist of one individual reflectorized unit directly applied to an aluminum backplate conforming to the requirements of ASTM B 209, alloy 6061-T-6, with a minimum thickness of 0.08 in.

6.2.2.2. **Type 2.** Reflector units for Type 2 object markers consist of one or more individual reflectorized panels of reflective sheeting. Directly apply reflector units either to the object marker post or to an aluminum backplate conforming to the requirements of ASTM B 209, alloy 6061-T-6, with a minimum thickness of 0.08 in.

6.2.3. **Barrier Reflectors.** Reflector units for barrier reflectors consist of one or more reflectorized panels of conformable reflective sheeting attached to a bracket or approved post to facilitate the mounting of the reflector on concrete traffic barriers, railings, MBGF, or other locations as shown on the plans. Provide barrier reflectors of the type specified in the D&OM **Standard Sheets.** Barrier reflectors must also meet the following requirements.

6.2.3.1. **Durability.** Weatherometer exposure will be in accordance with ASTM G 155 using Exposure Cycle 1 with a quartz inner filter glass and Type “S” Borosilicate outer filter glass.

Color must show no appreciable change and specific intensity must be a minimum of 80% of the beginning value after 2,000 hours weatherometer exposure.

The sheathing and bracket must show no cracking, crazing, blistering, chalking, or dimensional change after 2,000 hours weatherometer exposure.
6.2.3.2. **Adhesion.** The adhesive must adhere so that the sheeting cannot be peeled or pulled from the surface in pieces greater than 2 sq. in. when applied to clean aluminum panels at 50°F, aged for 36 hours at 140°F, and allowed to cool to room temperature for 12 hours.

6.2.3.3. **Stability.** The barrier reflector must pass thermal cyclic testing in accordance with Tex-882-B.

7. **ARCHIVED VERSIONS**

Archived versions are available.