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# DMS-4400

## Flexible Delineator and Object Marker Posts (Embedded and Surface-Mount Types)



Effective Date: **December 2022**

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### 1. DESCRIPTION

This Specification governs the material, composition, quality, sampling, and testing of flexible delineator and object marker posts, both embedded and surface-mount types, and describes the qualification procedures and the Material Producer List (MPL).

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### 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 non-conformance with the standard.

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### 3. MATERIAL PRODUCER LIST

The Materials and **Tests** Division (**MTD**) maintains the MPL of all materials in accordance with the requirements of this Specification. Materials appearing on the MPL, titled "[Flexible Delineator and Object Marker Posts](#)," require no further sampling and testing before use, unless deemed necessary by the project Engineer or **MTD**.

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### 4. 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. **The adhesives, attachment method, or both required for the installation of each type of post will also be listed. The adhesives, attachment method, or both must be the same as what was used for the impact test.**

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.

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### 5. PRE-QUALIFICATION PROCEDURE

5.1. **Pre-Qualification Request.** Submit a request for evaluation under DMS-4400 to [DMS\\_Prequal@txdot.gov](mailto:DMS_Prequal@txdot.gov).

Include the following information in the request:

- company name;
- physical and mailing addresses;
- contact person, phone number, and email address;
- identification as one of the following types:
  - **high-speed, high-impact, surface-mount post;**
  - **low-speed, low-impact, surface-mount post; or**
  - **low-speed, low-impact, ground-mount post;**

- product identification numbers for the posts, the adhesives, the attachment hardware used for installation and installation instructions, or all; and
- test results from NTPEP for the submitted posts.

5.2. **Pre-Qualification Sample.** Submit at least 10 flexible posts for each type, the adhesives, the attachment hardware used for installation and installation instructions, or all to the Texas Department of Transportation, MTD (CP51), 9500 North Lake Creek Parkway, Austin, TX 78717. Submit the posts with the delineator reflective sheeting attached. The delineator sheeting must meet all the requirements specified in DMS-8600, "Delineators, Object Markers, and Barrier Reflectors." Include the type, manufacturer, brand, color, and model of the delineator sheeting.

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

5.3. **Evaluation.** MTD will notify prospective bidders and suppliers after completion of material evaluation.

5.3.1. **Qualification.** If approved for Department use, MTD will add the material to the MPL.

Report changes in the composition or in the manufacturing process of any material to MTD. Significant changes reported by the producer, as determined by the Director of MTD, may require a re-evaluation of the product. The Department may conduct additional tests to identify changes in the material. Detected changes in composition or in the manufacturing process not reported by the manufacturer may be cause for removal of that material from the MPL.

5.3.2. **Failure.** Producers not qualified under this Specification may not furnish materials for use on Department projects.

Producers failing to qualify may submit a request for re-evaluation after 12 mo. have elapsed from the date of the original request. MTD may modify this time limit at its discretion. In the request for re-evaluation, document the cause of the issue and corrective action taken.

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

**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, or the warehouse.

Failure of materials to comply with the requirements of this Specification may be cause for removal of those materials from the MPL. In case of variance, the Department's tests will govern. A re-test by NTPEP is required at the re-test frequency NTPEP recommends to maintain approval. If no NTPEP re-test frequency is indicated, a re-test by NTPEP is required every 10 yr. to maintain approval.

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

- falsification of documentation,
- producer fails to report any change in material composition or manufacturing process to MTD,
- material fails to meet the requirements of this Specification based on periodic evaluation, or
- producer has unpaid charges for failing samples.

MTD will remove disqualified producers from the MPL and will not allow submission of material for re-qualification for up to 12 mo., at the discretion of the Department.

- 5.4. **Re-Qualification.** Once the disqualification period established by MTD has elapsed, producers disqualified and removed from the MPL may begin the re-qualification process by submitting a request in accordance with Section 5.1., "Pre-Qualification Request," including additional documentation identifying the cause of the problem and corrective action taken. The re-qualification process must then follow all subsequent Sections of Article 5., "Pre-Qualification Procedure."

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

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## 6. MATERIAL REQUIREMENTS

- 6.1. **General Requirements.** All posts must meet all requirements specified except where specific requirements are shown for a specific type.

Manufacture posts from any flexible material of a high-impact resistance quality and resistant to ultraviolet (UV) light, ozone, and hydrocarbons.

- 6.2. **Impact Test Requirements.** A post is deemed to have failed when it does not rebound to within 15° of vertical within 5 min. The minimum average of the number of impacts required before failure of the posts in each set (bumper hits and tire hits) for each type is as follows:
- High-speed, high-impact, surface-mount posts must exceed a minimum average of 150 tire impacts and 45 bumper impacts when tested at 70 mph on concrete pavement with the bonding agent, specific attachment methods submitted with the posts, or both.
  - Low-speed, low-impact, surface-mount posts must exceed a minimum average of 7 tire impacts and 7 bumper impacts when tested at 55 mph on concrete pavement with the bonding agent, specific attachment methods submitted with the posts, or both.
  - Low-speed, low-impact, ground-mount posts must exceed a minimum average of 7 tire impacts and 7 bumper impacts when tested at 55 mph in a standard soil with the installation procedure and equipment submitted with the posts.

- 6.3. **Design and Laboratory Test Requirements.** Tubular posts must either be permanently capped or sealed to prevent excessive amounts of rain or debris from entering, or designed to prevent accumulation of rain or debris within the post.

The surface texture to which the delineator is to be attached must be clean, smooth, and suitable for the adhesion of reflective sheeting. Delineator sheeting must be applied in accordance with the sheeting manufacturer's recommendations.

The length of the post must be as specified on the plans or on the purchase order.

The infrared and X-ray spectra of material from posts furnished must match the spectra for the pre-qualified posts in accordance with Tex-888-B and Tex-896-B.

The specific gravity of material from posts furnished must not vary more than 0.12 from the specific gravity of the pre-qualified posts when measured in accordance with Tex-891-B.

The posts and attached delineator sheeting must show no significant change in color, flexibility, or integrity after 1,000-hr. exposure in accordance with ASTM G 155 using Exposure Cycle 1 with a quartz inner filter glass and Type "S" Borosilicate outer filter glass. The delineator sheeting must meet the color and retroreflectivity requirements for Type B or Type C sheeting as specified in DMS-8300 before and after exposure.

Unless otherwise specified, the color of the posts must be opaque white or opaque yellow meeting all FHWA color requirements.

The posts must show no significant change in color, flexibility, or integrity after coating with herbicides, currently used by the Department, for 48 hr. then rinsed.

Furnish the same adhesives, attachment hardware, or both used for the NTPEP impact test.

6.4.

**Surface-Mount Post Base Requirements.** In addition to the above requirements, the base of surface-mount posts must meet the following requirements:

- Manufacture the base from a rigid, high-impact resistant material resistant to UV light, ozone, and hydrocarbons.
- Provide a post base that will not create a curb-like system when installed in a line with other posts. MTD must review and approve the dimensions of the base.

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## ARCHIVED VERSIONS

Archived versions are available.