
DMS - 4210

SNOWPLOWABLE PAVEMENT MARKERS

EFFECTIVE DATE: AUGUST 2004

4210.1. Description. This Specification governs for the materials, composition, quality, sampling, and testing of snowplowable pavement markers, and describes the approval procedures and the Material Producer List (MPL).

4210.2. 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.

4210.3. 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 "[Snowplowable Pavement Markers](#)," require no further testing, unless deemed necessary by the Project Engineer or CST/M&P.

4210.4. Bidders' and Suppliers' Requirements. Before any material is considered, it must be of manufacture and product code or designation shown on the MPL maintained by the Department.

4210.5. Pre-Qualification Procedure.

A. Pre-Qualification Request. Prospective producers interested in submitting their product for evaluation must submit a written request 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 with the request:

- Company name
- Physical and mailing addresses
- Type of material
- Contact person and telephone number

B. Pre-Qualification Sample. After receiving a request for pre-approval, CST/M&P will contact the producer and request the following:

- The producer must provide a laboratory test report with test data showing compliance of the material with this Specification.
- The producer must submit a minimum of five snowplowable markers.

C. Sampling and Testing. The Department will sample in accordance with Tex-729-I and will test in accordance with the methods listed in Article 4210.6.

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

1. Qualification. If approved for use by the Department, the material will be added 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 manufacturer, as determined by the Director of CST/M&P, may require a re-evaluation of performance.

The Department reserves the right to conduct random sampling of pre-approved, certified materials for testing and to perform random audits of test reports. Department representatives may sample material from the manufacturing plant, the project site, and the warehouse. CST/M&P reserves the right to test samples to verify compliance with this Specification.

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.

Costs of sampling and testing are normally borne by the Department; however, the costs to sample and test materials failing to conform to the requirements of this Specification are borne by the Contractor or supplier. This cost will be assessed at the rate established by the Director of CST/M&P and in effect at the time of testing.

Amounts due the Department will be deducted from monthly or final estimates on contracts or from partial or final payments on direct purchases by the State.

4210.6. Material Requirements. This Specification covers the general and specific requirements for five types of snowplowable pavement markers. All markers must meet all requirements, except when specific types list specific requirements.

A. Types.

- Type I-A must have one reflective face. The face must reflect amber light.
- Type I-C must have one reflective face. The face must reflect white light.
- Type I-R must have one reflective face. The face must reflect red light.
- Type II-A-A must have two reflective faces oriented 180° to each other. Each face must reflect amber light.
- Type II-C-R must have two reflective faces oriented 180° to each other. One face must reflect white light and one face must reflect red light.

B. Design and Shape. Make castings from ductile iron and in accordance with the requirements of ASTM 536. Use Grade 60–45–12 unless otherwise specified. The casting of the marker must be:

- a maximum width of 180 mm (7 in.)
- a maximum length of 250 mm (10 in.)
- a maximum installed height of 25 mm (1 in.) above the road surface

- clean and free from sand, blowholes, or other defects.

The surface of the castings must be free from burnt-on sand and must be reasonably smooth.

The portion of the casting that may encounter the snow removal blades must have a hardness of 50–55 RC when tested in accordance with ASTM E 18.

The snowplowable pavement marker must consist of a replaceable reflective lens.

- C. Optical Requirements.** The reflective devices must be capable of providing reflection of amber, red, or white light as required by the requisition or plans.

The reflective light of each reflective face must conform to the minimum reflective intensity requirements before and after two cycles of the heat test in accordance with Tex-846-B.

Table 1
Specific Intensity (SI) per Reflective Face at 0.2° Observation Angle

Horizontal Entrance Angle	Crystal	Amber	Red
4°	3.00	2.00	0.40
20°	1.50	1.00	0.20

SI is candelas of the returned light at the chosen observation and entrance angles for each lux of incident light per reflective face. The Department will use Tex-842-B to determine the SI.

Observation angle is the angle at the reflector between the observer's line of sight and the direction of the light incident on the marker.

Horizontal entrance angle is the angle in the plane parallel to the marker base between a line in the direction of the incident light and a line perpendicular to the leading edge of the reflective surface.

4210.7. Payment.

- A. Procurement by the State.** Payment for all materials under this Specification will be in conformance with the conditions prescribed in the contract awarded by the State.
- B. Contracts.** The Department will pay for all materials utilized by the Contractor in accordance with the Department's Standard Specification Item 672.

4210.8. Archived Versions.

Archived versions are available.