

Special Specification 6362

Recessed Pavement Markers



1. DESCRIPTION

The work will consist of furnishing and installing raised pavement markers (RPM) in a recessed groove in the pavement.

2. MATERIALS

2.1 **Markers.** Furnish RPM's in accordance with the following Department Material Specifications:

- **Reflectorized Pavement Markers.** DMS-4200, "Pavement Markers (Reflectorized)," types I-A, I-C, I-R, II-A-A, and II-C- R.

The following are descriptions for each type of RPM:

- **Type I-A.** The approach face must retro-reflect amber light. The body, other than the retro-reflective face, must be yellow.
- **Type I-C.** The approach face must retro-reflect white light. The body, other than the retro-reflective face, must be white or silver-white.
- **Type I-R.** The trailing face must retro-reflect red light. The body, other than the retro-reflective face, must be white or silver-white, except for I-R plowable markers which may be black.
- **Type II-A-A.** The 2 retro-reflective faces (approach and trailing) must retro-reflect amber light. The body, other than the retro-reflective faces, must be yellow.
- **Type II-C-R.** Contain 2 retro-reflective faces with an approach face that must retro-reflect white light and a trailing face that must retro-reflect red light. The body, other than the retro-reflective faces, must be white or silver-white.

2.2 **Adhesives.** Furnish adhesives that conform to the following requirements:

- DMS-6100, "Epoxy and Adhesives," Type II—Traffic Marker Adhesives.
- DMS-6130, "Bituminous Adhesive for Pavement Markers."
- The Contractor may propose alternate adhesive materials for consideration and approval.

2.3 **Sampling.** The Engineer will sample in accordance with Tex-729-I.

3. EQUIPMENT

Furnish all equipment, tools, and machinery necessary for the proper prosecution of the work. Furnish equipment, tools, and machinery in good repair and operating condition. All equipment must be approved by the Engineer before beginning work. If at any time, the Engineer determines any equipment is defective to the point that it may affect the quality of the work, that equipment must be immediately repaired or replaced.

The Engineer may require demonstration of the equipment's capabilities.

3.1 **Planing Machine.** Use planing machines that:

- are self-propelled with enough power, traction, and stability to maintain an accurate depth of cut and slope;
- use integral loading and reclaiming devices to allow cutting, removal, and discharge of the material
- Include devices to control dust created by the cutting action

3.2 **Sweeper.** Use a street sweeper to remove cutting and debris from the planed or textured pavement unless otherwise approved. Equip the sweeper with a water tank, dust control spray assembly, both a pick-up and a gutter broom, and a debris hopper.

4. CONSTRUCTION

A recessed groove will be cut in the pavement a minimal of 5 in. wide and 13/16 in. deep on a 12 in. diameter. Provide 2 ft. long slopes to expose the front and back of the RPM. Provide slopes that transition from 0 in. (normal pavement) to 13/16 in. depth as detailed in the plans.

The recessed area must be cleaned free of all loose material, and dry before the placement of the reflective pavement marker. All cuttings and debris from resulting from the construction of the recessed area must be completely removed from the surface of the roadway by mean of street sweeper unless otherwise approved. The pavement marker must be cemented with epoxy in the center of the 13/16 in. deep recessed groove.

Remove the pavement surface for the length, depth and width shown on the typical section or detail. Do not damage appurtenances or underlying pavement. Repair any existing pavement damaged as a result of construction operations, at no additional cost to the Department.

A straight edge will be placed across the recess to check that the top of the marker is below the pavement.

Spacing and orientation of the reflective pavement markers must be as detailed in the plans or as directed.

Use epoxy adhesive for plowable reflectorized pavement markers.

Apply enough adhesives to:

- ensure that 100% of the bonding area of RPMs is in contact with the adhesive, and
- ensure that RPMs, except for plowable markers, are seated on a continuous layer of adhesive and not in contact with the pavement surface.

Apply adhesives in accordance with manufacturer's recommendations unless otherwise required by this Article. Apply bituminous adhesive only when pavement temperature and RPM temperature are 40°F or higher. Do not heat bituminous adhesive above 400°F. Machine agitate bituminous adhesive continuously before application to ensure even heat distribution.

Machine-mix epoxy adhesive. Apply epoxy adhesive only when pavement temperature is 50°F or higher.

Furnish RPMs free of rust, scale, dirt, oil, grease, moisture, and contaminants that might adversely affect the adhesive bond.

Place RPMs immediately after the adhesive is applied and ensure proper bonding. Do not use adhesives or any other material that impairs the functional retro-reflectivity of the RPMs.

Provide a 30-day performance period that begins the day following written acceptance for each separate location. The date of written acceptance will be the last calendar day of each month for the RPMs installed that month for the completed separate project locations. This written acceptance does not constitute final acceptance.

Replace all missing, broken or non-reflective RPMs. Visual evaluations will be used for these determinations. Upon request, the Engineer will allow a Contractor representative to accompany the Engineer on these evaluations.

The Engineer may exclude RPMs from the replacement provisions of the performance, provided the Engineer determines the failure is a result of causes other than defective material or inadequate installation procedures. Examples of outside causes are extreme wear at intersections, damage by snow or ice removal, and pavement failure.

Replace all missing or non-reflective RPMs identified during the performance period within 30 days after notification. The end of the performance period does not relieve the Contractor from the performance deficiencies requiring corrective action identified during the performance period.

5. MEASUREMENT

This Item will be measured by each Recessed Reflective Pavement Marker.

6. PAYMENT

The work performed and supplies furnished in accordance with this Item and measured as provided under "Measurement" will be paid at the unit price bid for "Recessed Reflective Pavement Marker". This price is full compensation for furnishing and installing RPM's; and removing materials to the depth shown, loading, collecting, hauling, and disposing debris, sweeping; and for equipment, labor, tools, and incidentals.