

Standard Guidelines for Product Review
PAVEMENT MARKERS, TYPE 1;
Section 02840.60
July 18, 2000

02840.60 – Pavement Markers, Type I:

Description - Type I pavement markers are reflectorized. The markers are surface mounted and shall be:

1. Not more than 4.5 inches (120 mm) wide.
2. Be able to adhere to asphalt or concrete surfaces with bituminous or epoxy adhesives.

Process - Submit the following:

- Preliminary Information for Product Evaluation Form.
- Independent Test Results showing compliance with Specs listed below.
- Product Data Sheet.
- Detailed installation instructions.
- List of Limitations and Precautions.
- Submit 15 markers for our evaluation (each color).

Specifications - Strength, Optical Performance, Pull-Off:

Strength Requirements:

(1) Method Of Test - Select 3 specimens of any type of marker for load testing. Place each 100 mm x 100 mm marker on an "Alert 15175" pad, 7 mm thick, 17 ply, or equivalent and centered over the open end of a vertically positioned hollow cylinder that is 25 mm high with an internal diameter of 75 mm and a wall thickness of 6 mm. Place each 50 mm x 100 mm marker directly on a 12 mm thick flat steel plate. Apply a load necessary to break the marker at a speed of 5 mm/min to the top of the marker through a 25 mm diameter solid metal cylinder centered on the top of the marker.

(2) Requirements - Failure of the marker shall be determined as either breakage, deformation, or delamination of the shell and filler material at a load less than 680 kg for the 100 mm x 100 mm markers and 1800 kg for the 50 mm x 100 mm markers.

(3) Retest - Should any one of the 3 markers selected for strength testing fail to comply with the strength requirements of this specification, 6 additional specimens will be tested. The failure of any one of these 6 specimens shall be cause for the rejection of the entire lot or shipment represented by this sample.

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DEPARTMENT OF
TRANSPORTATION

Construction Section
800 Airport Road SE
Salem, OR 97301-4798
503/986-3059

Optical Performance - Test three markers of each color according to Federal Test Method Standard 370. The luminous intensity of each reflective surface, when tested at 0.2° observation angle shall not be less than the following specified value:

<u>Entrance Angle</u>	<u>Coefficient of Luminous Intensity (R_l), cd/lx</u>	
	<u>White</u>	<u>Yellow</u>
0°	3.0	1.5
20°	1.2	0.6

Pull-Off Bond Test - Provide markers with bottom surfaces capable of good bond to adhesive. Five specimens shall be tested and shall provide a minimum average tensile bond strength of 3.4 MPa. The test consists of bonding a 38 mm diameter steel test plug with sandblasted surface to the center of the marker bottom using an epoxy meeting the requirements of AASHTO M237. After 48 hours curing time at 23 °C ± 2 °C the test plugs shall be tensile loaded at a rate of 2200 kg/min to failure.

Please forward your request and/or questions to:

OREGON DEPARTMENT OF TRANSPORTATION
ATTN: MIKE DUNNING (503) 986-3059
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800 AIRPORT RD SE
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