

**INDIANA DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS DIVISION**

**MACROTEXTURE OF MILLED PAVEMENT
ITM No. 812-03T**

1.0 SCOPE.

- 1.1 This test method describes the means to evaluate the macrotexture of a milled pavement surface.
- 1.2 The values stated in either SI metric or acceptable English units are to be regarded separately as standard, as appropriate for a specification with which this ITM is used. Within the text, English units are shown in parenthesis. The values stated in each system shall be used independently of the other, with out combining values in any way.
- 1.3 This ITM may involve hazardous materials, operations, and equipment. This ITM does not purport to address all of the safety problems associated with the ITM's use. The ITM's user's responsibility is to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2.0 REFERENCE.

2.1 AASHTO Standards.

M 247 Glass Beads Used In Traffic Paints

2.2 ASTM Standards.

E 1272 Standard Specification for Laboratory Glass Graduated Cylinders

2.3 ITM Standards.

ITM 802 Random Sampling

3.0 TERMINOLOGY. Terms and abbreviations shall be in accordance with the Department's Standard Specifications, Section 101.

4.0 SIGNIFICANCE AND USE. This ITM is used to evaluate the macrotexture of a milled pavement surface.

5.0 APPARATUS.

- 5.1 Filler. Type 1 glass beads in accordance with AASHTO M 247.
- 5.2 Spreader. A flat, stiff hard disk made from methyl methacrylate (Plexiglas) with a thickness of 13 ± 3 mm (0.5 ± 0.1 in.), diameter of 200 ± 50 mm (8 ± 2 in.) and a round handle affixed in the center used to spread the filler.
- 5.3 Graduated Cylinder. A class B or better, style III, 250 mL capacity graduated cylinder in accordance with ASTM E 1272 used to measure the volume of filler for the test.
- 5.4 Brushes. A stiff wire brush and a soft bristle brush used to clean the pavement.
- 5.5 Container. A small container with a secure and easily removable cover used to store 200 ml of filler.
- 5.6 Screen. A shield used to protect the test area from air turbulence created from wind or traffic.

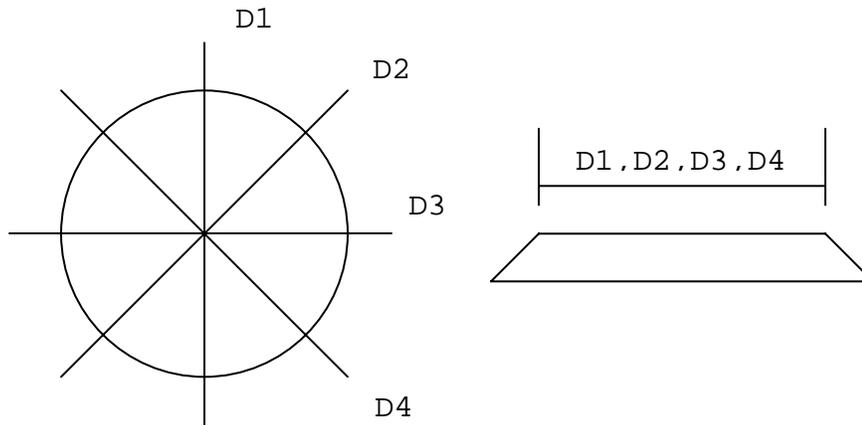
6.0 LABORATORY PREPARATION.

- 6.1 Prepare one container with 200 ml of filler for each sample location.
- 6.2 Fill the graduated cylinder to the specified volume.
- 6.3 Gently tap the side of the graduated cylinder to level the surface of the filler.
- 6.4 Place the measured volume of filler in the container.
- 6.5 Label the container with type and quantity of filler.

7.0 PROCEDURE.

- 7.1 Randomly determine a sample location on the milled pavement surface in accordance with ITM 802, to test the macrotexture.

- 7.2 Inspect the sample location and ensure it is a dry, homogeneous site, free of unique or localized features such as cracks, joints, stripping and patching.
- 7.3 If localized features are present, move up-station at the same transverse offset until a suitable site is found.
- 7.4 Clean the sample location using the brushes to remove any, residue, debris or loosely bonded material.
- 7.5 Place the screen on the milled pavement surface to protect the sample location from air turbulence.
- 7.6 Hold the container with filler above the pavement at the sample location at a height not greater than 100 mm (4 in.).
- 7.7 Pour the measured volume of filler from the container onto the milled pavement surface into a conical pile.
- 7.8 Place the spreader lightly on top of the conical pile of filler being careful not to compact the filler.
- 7.9 Move the spreader in a slow, circular motion to disperse the filler in a circular area and to create a defined crest around the perimeter.
- 7.10 Continue spreading the filler until it is well dispersed and the spreader rides on top of the high points of the milled pavement surface.
- 7.11 Measure and record the diameter of the circular area four times, at intervals of 45° and to the nearest 5 mm, as shown below.
- 7.12 Measure the diameter of the circular area from the crest of the slope on one side, through the center, and to the crest of the slope on the other side of the circular area.
- 7.13 Calculate the average diameter of the circular area covered by the filler.
- 7.14 Determine the macrotexture ratio of the milled pavement surface by using the cross reference table on the Macro-Texture Report form.



8.0 CALCULATIONS. Calculate the average diameter of the circular area covered by the filler.

$$D_a = (D_1 + D_2 + D_3 + D_4) / 4$$

Where:

D_a = Average diameter of the filler area, mm

D_1, D_2, D_3, D_4 = Diameters of the filler area, mm

9.0 REPORT. Report the following information.

Date of test

Contract number

Station of sample location

Offset of sample location

Baseline for offset

Name of milling contractor representative

Name of prime contractor representative

Diameter measurements of filler area, D_1, D_2, D_3, D_4

Average diameter of filler area, mm

Macrotecture ratio

