AUSTROADS TEST METHOD ATM 453

Surface Deviation Using a Straightedge

Commentary

Scope

This test method describes the procedure for obtaining a measure of the evenness of a pavement surface as determined by the deviation from a three metre straightedge. It is applicable only to the measurement of depressions in the pavement surface and to those straightedges that can be positioned in direct contact with the pavement surface.

Further Development
None proposed

Contents

1. Equipment

The following apparatus is required:

(a) Straightedge, a 3 m rigid length of metal of either rectangular or I-section shape. The flat working face of the straightedge having deviations along its entire length less than ± 0.5 mm from true, and less than ± 1.0 mm from true when resting on supports at both ends. The straightedge will be constructed so that it can rest unsupported on the pavement with its working face in contact with the pavement.

(b) Depth gauge, a suitable device for measuring the gap between the straightedge and the pavement to the nearest 1 mm. One such device is a metal wedge that is slid beneath the straightedge and calibrated in so the gap width can be read directly from the wedge as determined by the distance penetrated by the wedge at its first contact with the straightedge.

(c) Tape measure, steel rule and wheel meter as required.

2. Procedure

The procedure shall be as follows:

(a) Select the test location and remove all loose material or debris from the surface of the pavement.

(b) Place the straightedge at the required orientation (normally longitudinal or transverse to the centre-line) so that the working face of the straightedge is in contact with the pavement surface (Note 4 (a)).

(c) Reposition the straightedge, if necessary, to ensure that:

  i) the straightedge sits firmly on the pavement surface without rocking (Note 4 (b))

  ii) the straightedge is at right angles to any linear feature that is under the straightedge (for example, joint, edge, tie-in), and

  iii) for other than joint testing, the length of the straightedge that is cantilevered is minimised.

(d) Where the test location is on a crown or superelevation of the road or there is any feature that may affect the measurement, record these details.

(e) Visually estimate the point at which the greatest deviation appears to occur between the underside of the straightedge (between two points of contact) and the pavement surface.

(f) Using the depth gauge, determine the deviation at this point and record the value to the nearest 1 mm.

(g) Repeat Steps 2 (e) to 2 (f) for other points along the straightedge, as necessary until the maximum deviation is recorded.

3. Test Report

The following shall be reported:

(a) Surface type and layer.

(b) Test location (for example, chainage, direction, lane, offset/wheel path and so on).

(c) Orientation of straightedge relative to centreline.

(d) Maximum deviation to the nearest 1 mm.

(e) Where the cantilever is greater than 750 mm, the length of the cantilever to the nearest 5 mm.

(f) Test location features (for example, convex shape, linear feature, crown, superelevation and so on).

(g) Reference to this test method.

4. Notes on Test Method

(a) Where a joint is to be tested, position one end of the straightedge directly over the joint with the remainder of the straightedge supported on the surface to be tested.

(b) Where a convex surface prevents the positioning of the straightedge firmly on the pavement without rocking, terminate the test. Record “Convex shape” for the test location.

Amendment Record

Amendment no.	Clauses amended	Action	Date
0	New test method	New	February 2022
1	Clause 1 (a)-(d) renumbered.	Format	February 2022
	In 2(b), cross reference to Note 5(a) was updated to Note 4(a).	Substitute	
	Heading 4 edited.	Substitute	
	Note 4(c) deleted.	Removed	

Key

Format	Change in format
Substitution	Old clause removed and replaced with new clause
New	Insertion of new clause
Removed	Old clauses removed