

AUSTROADS TEST METHOD AG:AM/T005

DISTANCE MEASUREMENT VALIDATION OF ROAD CONDITION MONITORING VEHICLES

1 SCOPE

This test method defines the procedure for validating the distance measurement performance of vehicles conducting road condition monitoring surveys (e.g. inertial laser profilometers, Falling Weight Deflectometers, etc.).

This test method does not address all occupational health and safety issues associated with its use. It is the responsibility of the user to operate in accordance with appropriate legislation.

2 REFERENCED DOCUMENTS

International Organization for Standardization (ISO) 2005, *Quality management systems – fundamentals and vocabulary*, ISO 9000:2005.

3 DEFINITIONS

(a) Validation

ISO (1994) defines 'validation' as:

confirmation, through the provision of objective evidence that requirements for a specific intended use or application have been fulfilled.

4 PROCEDURE

- (a) Select a section of road pavement of known 1 km in length, measured to an accuracy of ± 1 m using ground survey techniques, so that the test vehicle can operate at the required speeds over the entire distance. Measure the 'true' distance (i.e. travel distance inclusive of slope, undulation and alignment) using precise geomatic (ground survey) techniques.
- (b) Following the instructions in the manufacturer's User Manual, use the test vehicle and distance measuring system to measure the length of the selected pavement section.
- (c) Repeat (b) four times to obtain a total of five sets of 'measured' distance readings.

5 REPORTING

Report the following:

- (a) the location of the road section
- (b) data and time of validation
- (c) identification of test vehicle used
- (d) the 'true' distance measured in 4(a)
- (e) the distance measured by the test vehicle, and its approximate speed during the run, for each of the five test runs determined in 4(c)
- (f) the difference between distances measured by the test vehicle and the ground surveyed measured distance for each of the test runs, expressed as a percentage of distance measured by the ground survey
- (g) a statement as to whether the test vehicle passes or fails validation of distance measurement – the test vehicle is considered to have passed the validation if all values determined in (f) are within the range $\pm 0.1\%$.

6 FAILED VALIDATION

In the event that the test vehicle fails the validation process, causes for the failure must be investigated, defects rectified and this test method repeated.

AMENDMENT RECORD

Amendment No.	Sections amended	Action ⁽¹⁾	Date
1 (Initial release)	All (Michael Moffatt, ARRB)	New	26 March 2007
2 (Revised release)	All (Richard Wix & Young Choi, ARRB, project AT1484)	Substitution	2 March 2011
¹ Key: Format change in format Substitution old section removed and replaced with new section New insertion of new section Removed old section removed			