1. SCOPE

This test method sets out the procedure for measuring the roughness of a pavement expressed in terms of the International Roughness Index (IRI) using the ARRB Walking Profiler which is pushed over the surface by an operator at a slow walking pace.

This method is usually used to provide base measurements for comparison with a multi-point inertial profiler used for measuring pavement roughness.

2. APPARATUS AND PROCEDURE

The test shall be performed in accordance with Austroads Test Method PAT 01:2001 for each section with the following additions:

(a) The profiler shall be capable of measuring the longitudinal road surface profile along a wheel path at least every 250 mm with a precision in elevation of at least 0.5 mm operating over a range of wave length of at least 0.5 metre to 50 metres;

(b) Testing shall not be performed when it is raining or when there is pooled water on the pavement surface;

(c) Record physical features that may affect the ride quality readings.

(d) A device for measuring the geographic coordinates of the start and end of survey is required. Record the start and end geographic coordinates of the survey.

(e) Record significant cross roads, intersections, kilometre marks, reference markers (see VicRoads publication: A Guide to SRRS Data Collection in the Field) and other features to enable the location system used to be referenced to the data recorded.

(f) When providing base measurements for comparison with an inertial laser profiler, the minimum section length shall be 500 m and the single track IRI for the left wheel path need only be measured.

3. CALCULATIONS

Calculate the following:

(a) The single track IRI using the quarter car model for each wheel path for each 100 m section being tested;

(b) If required, the lane IRI for each lane for each 100 m section being tested;

(c) If required, the NAASRA roughness for each lane for each 100 m section being tested using the following equation:

   \[ \text{NAASRA (counts/km)} = 26.49 \times (\text{lane IRI}) - 1.27. \]

4. REPORT

Report the following:

(a) The start and end geographical position of the survey/road;

(b) The single track IRI for each wheel path for each 100 m section to the nearest 0.01 m/km - for base line measurements only the single track IRI for the left wheel path is required;

(c) If required, the lane IRI for each 100 m section to the nearest 0.01 m/km;

(d) If required, the NAASRA roughness in counts/km to the nearest whole number for each lane for each 100 m section;

(e) Relevant details as recorded in the procedure 2(c) and 2(e).

(f) Any additional information as detailed in Austroads Test Method PAT 01:2001.