

EVALUATION OF PAVEMENT SMOOTHNESS

(An Arizona Method)

SCOPE

1. This test method describes the procedure for determining the smoothness of pavements. Profile measurements are taken on designated area(s) of the pavement. Those measurements are analyzed and reported as International Roughness Index (IRI) values, inches per mile (in/mi).

APPARATUS

2. The equipment used to perform profile testing shall be a General Motors Research (GMR)-type Inertial Profiler, meeting the requirements of ASTM E 950.

METHOD OF MEASURING

3. The test vehicle is driven in the wheel paths of each lane a sufficient number of times to collect two valid individual sets of profile measurements. The speed at which profile measurements are taken shall be a constant speed (± 2 mph), between 30 and 65 mph.

CALCULATIONS

4. (a) Profile measurements taken using the GMR-type Inertial Profiler will be reduced to IRI smoothness values, in accordance with the requirements of ASTM E 1926. IRI smoothness values will be recorded to the nearest 0.1 in/mi for each 0.1 mile increment.

(b) For each individual set of IRI smoothness values, the average value will be determined.

(c) The set of IRI smoothness values with the lowest average value will be used for acceptance purposes.

(d) If necessary, 0.1 mile increment IRI values used for acceptance purposes shall be adjusted to account for any exception areas required by the contract documents.

REPORT

5. A report will be prepared showing:

- (a) The date of test.
- (b) The name of the test operator(s).
- (c) Identification of test vehicle.
- (d) Speed of test vehicle during testing.
- (e) Project number, if applicable.

(f) The individual IRI value, adjusted as necessary per paragraph 4(d), and recorded to the nearest 0.1 in/mi for each 0.1 lane-mile increment (Actual Smoothness Value "AS").

(g) The location of each 0.1 lane-mile increment for the corresponding individual IRI value.