
Standard Practice for Quantifying Roughness of Pavements

AASHTO Designation: R 43-13 (2021)¹

Technically Revised: 2013

Reviewed but Not Updated: 2021

Technical Subcommittee: 5a, Pavement Measurement



**American Association of State Highway and Transportation Officials
555 12th Street NW, Suite 1000
Washington, DC 20004**

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1. SCOPE

- 1.1. This standard practice describes a method for estimating roughness for a pavement section. An International Roughness Index (IRI) statistic is calculated from a single longitudinal profile measured with a road profiler in both the inside and outside wheel paths of the pavement. The average of these two IRI statistics (Mean Roughness Index, MRI) is reported as the roughness of the pavement section.
 - 1.2. This standard practice recognizes the need for a quality assurance (QA) plan and proposes guidelines for the development of a QA plan.
 - 1.3. Measurements of profile are made in accordance with ASTM E950/E950M. If any part of this standard practice is in conflict with its referenced documents, such as ASTM standards or other AASHTO standards, this standard practice takes precedence for its purpose.
 - 1.4. *This standard practice does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations related to and prior to its use.*
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2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standard:*
 - R 56, Certification of Inertial Profiling Systems
- 2.2. *ASTM Standards:*
 - E867, Standard Terminology Relating to Vehicle-Pavement Systems
 - E950/E950M, Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer-Established Inertial Profiling Reference
 - E1166, Standard Guide for Network Level Pavement Management
 - E1926, Standard Practice for Computing International Roughness Index of Roads from Longitudinal Profile Measurements
 - E2560, Standard Specification for Data Format for Pavement Profile
- 2.3. *Other Document:*
 - Sayers, M. W. On the Calculation of IRI from Longitudinal Road Profile. In *Transportation Research Record 1501*, Transportation Research Board, National Research Council, Washington, DC, 1995, pp. 1–12.