
Standard Practice for

Determination of International Roughness Index (IRI) to Quantify Roughness of Pavements

AASHTO Designation: PP 37-04



American Association of State Highway and Transportation Officials
444 North Capitol Street N.W., Suite 249
Washington, D.C. 20001

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1. SCOPE

- 1.1. This 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 wheelpaths of the pavement. The average of these two IRI statistics is reported as the roughness of the pavement section.
- 1.2. The 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 E 950. If any part of this practice is in conflict with its references made, such as ASTM standards, this practice takes precedence for its purpose.
- 1.4. *This practice does not purport to address all of the safety issues, if any, associated with its use. It is the responsibility of the user of this practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations related to and prior to its use.*

2. REFERENCED DOCUMENTS

- 2.1. *ASTM Standards:*
 - E 867, Terminology Relating to Vehicle-Pavement Systems
 - E 950, Standard Test Method for Measuring the Longitudinal Profile of Traveled Surfaces with an Accelerometer Established Inertial Profiling Reference
 - E 1166, Standard Guide for Network Level Pavement Management
- 2.2. *Other Documents:*
 - Karamihas, S. M., T. D. Gillespie, R. W. Perera, and S. D. Kohn. *NCHRP Report 434: Guidelines for Longitudinal Pavement Profile Measurement*. TRB, National Research Council, Washington, DC, 1999.
 - Sayers, Michael W. On the Calculation of IRI from Longitudinal Road Profile. University of Michigan, Transportation Research Institute, Preprint TRB, 74th Annual Meeting, Washington, DC, January 1995.
 - Sayers, Michael W., T. D. Gillespie, and W. D. O. Paterson. Guidelines for Conducting and Calibrating Road Roughness Measurements. *The World Bank Technical Paper*, Number 46, The World Bank. 1986.