Standard Method of Test for

Continuous Measurement of Sideway-Force Friction Number for Highway Pavements

AASHTO Designation: TP 143-21¹

First Published: 2021

Technical Subcommittee: 5a, Pavement Measurement



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1. SCOPE

- 1.1. This test method covers the measurement of the sideway-force friction of paved surfaces using a tire mounted at 20 degrees, herein referred to as the "device."
- 1.2. This test method utilizes the measurements obtained by a device, containing one freely rotating test wheel angled at 20 degrees to the direction of motion, and operated over a pavement surface at operating speed while the test wheel is under a vertical load. The test equipment has been built onto a number of different vehicle chassis and functions independently of vehicle choice. This method provides data of the sideway-force friction (and other data) along the whole length of the pavement surface being tested. The data are intended for use in comparing certain frictional properties of a pavement relative to those of other pavements or for evaluating changes in these frictional properties of a pavement with the passage of time. The data are insufficient to determine the distance required to stop a vehicle on either a wet or a dry pavement.
- **1.3.** The values stated in SI units are to be regarded as standard.
- **1.4.** This standard 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 to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use. See also Section 6.
- **1.5.** The quality of the results produced by this standard are dependent on the competence of the personnel performing the procedure and the capability, calibration, and maintenance of the equipment used. Agencies that meet the criteria of R 18 are generally considered capable of competent and objective testing/sampling/inspection/etc. Users of this standard are cautioned that compliance with R 18 alone does not completely assure reliable results. Reliable results depend on many factors; following the suggestions of R 18 or some similar acceptable guideline provides a means of evaluating and controlling some of those factors.

2. REFERENCED STANDARDS

- 2.1. *AASHTO Standard*:
 - R 18, Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories.
- **2.2**. *ISO Standards*²:
 - ISO 23529, Rubber General Procedures for Preparing and Conditioning Test Pieces for Physical Test Methods

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	BS 903-A2/ISO 37, Physical Testing of Rubber. Method for determination of tensile stress- strain properties
	ISO 2781, Rubber, Vulcanized, or Thermoplastic – Determination of Density
-	ISO 48, Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD)
	ISO 4662, Rubber – Determination of rebound resilience of vulcanizates
Oth	her Documents:
•	Brittain, S. Speed Correction for SCRIM Survey Machines. Published Project Report PPR587. TRL, Berkshire, United Kingdom, 2011. Formerly Transport Research Laboratory. Available at https://trl.co.uk/publications/speed-correction-for-scrim-survey-machines.
	Dunsford, A. GripTester Trial - October 2009 Including SCRIM Comparison. Project Report PPR497. Transport Research Laboratory, Berkshire, United Kingdom, August 2010. Available at https://trl.co.uk/publications/ppr497.
•	Highways England. Skidding Resistance. CS 228. In <i>Design Manual for Roads and Bridges</i> , Pavement Inspection and Assessment. Highways England, Birmingham, United Kingdom, Revision 1, March 2020. Available at
	https://www.standardsforhighways.co.uk/dmrb/search/e092f5e5-53a8-43dc-a005-f33ebeed845f.
•	Hosking, J. R., and G. C. Woodford. Measurement of Skidding Resistance Part III. Factors Affecting SCRIM Measurements. TRRL Report 739. TRL, Berkshire, United Kingdom, 1976. Formerly Transport and Road Research Laboratory. Available at https://trl.co.uk/publications/lr739.
ડા	JMMARY OF TEST METHOD

3.1. The device is a self-contained pavement-testing machine that measures sideway-force friction of paved surfaces using a special narrow test wheel. A typical device is illustrated in Figure 1.

2.3.

3.