

Australian/New Zealand Standard™

**Slip resistance measurement of existing
pedestrian surfaces**



Standards Australia



STANDARDS
NEW ZEALAND
Pūrongo Aotearoa

AS/NZS 4663:2002

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The following interests are represented on Committee BD-094:

Australian Building Codes Board
Australian Chemical Specialties Manufacturers Association
Australian Institute for Non-destructive Testing
Australian Resilient Floor Covering Association
Australian Stone and Terrazzo Association
Australian Tile Council
Ceramic Tile Manufacturers Association
Clay Brick and Paver Institute
Concrete Masonry Association of Australia
CSIRO, Building, Construction and Engineering
Ergonomics Society of Australia
International Accreditation New Zealand
National Injury Prevention Advisory Council
Royal Australian Institute of Architects
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Additional interests participating in preparation of Standard:

University of Sydney

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Australian/New Zealand Standard™

Slip resistance measurement of existing pedestrian surfaces

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-094, Slip Resistance of Flooring Surfaces.

The objective of this Standard is to provide users, maintenance organizations and facility managers with standardized methods of testing existing in situ pedestrian surface materials for determination of their slip resistance.

Wet testing is carried out using two types of rubber materials. The TRRL rubber has been traditionally used for testing outdoor surfaces. The Four S rubber was specifically developed to replace the TRRL rubber for testing smoother indoor surfaces, as it provides greater discrimination between such internal surfaces. The use of these rubbers on the specified test devices enables universal comparison of test results. The testing does not take into account the performance of different footwear sole materials or profiles. The slip resistance of these materials can vary widely, even within generic groups of polymers such as PVC or polyurethane. The slip resistance of footwear is also a function of the soling material, the tread, the effects of ageing, degradation and wear, as well as design and construction parameters. While it may be possible to form sliders using other soling materials, it is outside the scope of this Standard.

Standards Australia Handbook HB 197, *An introductory guide to the selection of slip resistant pedestrian surface materials*, establishes a basis for specifying pedestrian surface materials for various locations based on wet slip resistance classifications that are obtained when testing to AS/NZS 4586, *Slip resistance classification of new pedestrian surface materials*. HB 197 recognizes that slip resistance test methods have inherent limitations.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

The term 'normative' has been used in this Standard to define the application of the Appendix to which it applies. A normative Appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Slip resistance measurement of existing pedestrian surfaces****1 SCOPE**

This Standard provides means of measuring the frictional characteristics of existing pedestrian surfaces in wet and dry conditions.

This Standard does not cover gratings or carpet.

NOTE: The slip resistance testing of carpets used for synthetic sporting surfaces is covered in AS 2983.4.

2 APPLICATION

The test methods in this Standard shall be used for existing pedestrian surfaces.

This Standard is also intended for evaluating surface applications and treatments including products such as sealers, polishes and etchants, which modify the surface characteristics of pedestrian surfaces.

The method specified for the measurement of wet slip resistance shall be used for all external areas and those internal pedestrian surfaces where such measurements are required. It does not contemplate shoe sole materials, characteristics of individual gaits, or other factors that may contribute to slips.

NOTES:

- 1 The test methods specified in this Standard may be unsuitable for measuring some pedestrian surfaces, for example, highly profiled surfaces such as shown in Figure 1.
- 2 Dynamic test machines based on force plates or load cells may be suitable for determining the level of slip resistance for specific applications or circumstances.
- 3 In Appendix A, provision has been made for either of two rubbers to be used in the wet pendulum test method. Clay and concrete pavers have traditionally been tested using TRRL rubber, whereas Four S rubber is used for other pedestrian surfaces.
- 4 Caution should be exercised in interpreting individual dry floor friction results, which may be unexpectedly high on some very smooth flat surfaces

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS

1683.15 Methods of test for elastomers

1683.15.1 Method 15.1: International rubber hardness

2983 Methods of test for synthetic sporting surfaces

2983.4 Method 4: Test for slip resistance

SAI

HB 197 An introductory guide to the slip resistance of pedestrian surface materials

Australian Road Research Board

ATM No 6 Detailed procedure for calibration of the British portable skid resistance tester