

Australian/New Zealand Standard™

**Slip resistance classification of new  
pedestrian surface materials**

## **AS/NZS 4586:2004**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-094, Slip Resistance of Flooring Surfaces. It was approved on behalf of the Council of Standards Australia on 22 September 2004 and on behalf of the Council of Standards New Zealand on 1 October 2004.  
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The following are represented on Committee BD-094:

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Australian Building Codes Board  
Australian Institute for Non-Destructive Testing  
Australian Resilient Floorcovering Association  
Australian Stone and Terrazzo Association  
Australian Tile Council  
Building Service Contractors Association of Australia  
CSIRO Manufacturing and Infrastructure Technology  
Ceramic Tile Manufacturers Association  
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## Australian/New Zealand Standard™

# Slip resistance classification of new pedestrian surface materials

Originated as part of AS/NZS 3661.1:1993.  
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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, to supersede AS/NZS 4586:1999.

*This Standard incorporates Amendment No. 1 (February 2005). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to provide users and specifiers of pedestrian surface materials (architects, engineers, ergonomists, facility managers, manufacturers and the like) with means for classifying such surfaces according to their pedestrian slip resistance for use in the selection of surfaces.

The slip resistance classifications have been determined for unused surfaces using specific conditions, for instance special rubbers, barefoot testing, and so on. These classifications are based on an assessment of the contribution of a pedestrian surface to the risk of slipping and they will assist in the specification of a surface material suitable for most pedestrian applications. Factors such as usage, cleaning systems, applied coatings and patterns of wear may affect the characteristics of the surface after classification.

HB 197, *An introductory guide to the slip resistance of pedestrian surface materials*, provides guidelines for the selection of slip resistant pedestrian surfaces classified in accordance with this Standard. It is recommended that this handbook be read in conjunction with this Standard.

Lapping paper testing is currently the subject of ongoing research, particularly with regard to the issue of test slider preparation for the pendulum test. Standards Australia Committee BD-094 is evaluating the results of this research. The committee may find it appropriate to issue further amendments to this Standard should improved differentiation between the slip potential of materials be identified. BS 7976-2 *Pendulum tester Part 2: Method of operation* provides details of the 3 µm lapping paper procedure.

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.

This Standard provides a means of demonstrating compliance for the acceptance and rejection of new surfaces for nominated criteria.

A new floor is considered to become an existing floor once it has been installed and made available for pedestrian traffic, other than movements specifically for purposes of formal testing to determine compliance with this Standard. Testing of existing floors is covered in AS/NZS 4663, *Slip resistance measurement of existing pedestrian surfaces*.

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## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard****Slip resistance classification of new pedestrian surface materials****1 SCOPE**

This Standard provides means of classifying pedestrian surface materials according to their frictional characteristics when determined in accordance with the test methods set out in Appendices A, B, C and D. These test methods enable characteristics of surface materials to be determined in either wet or dry conditions. This Standard does not cover carpet.

**2 APPLICATION**

The test methods in this Standard shall be used for the classification of pedestrian surface materials for use in either the 'wet' or the 'dry' condition.

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

At least one of the three methods specified for the measurement of wet slip resistance (Appendices A, C or D) shall be used for all external pedestrian surfaces and those internal pedestrian surfaces that have a reasonably foreseeable risk of the presence of wet substances such as water, grease and oil.

The indication of the test apparatus relates to the slip resistance potential of the surface tested in the test environment. It does not contemplate shoe sole materials, characteristics of individual gaits, or other factors that may contribute to slips.

## NOTES:

- 1 The inclining ramp test methods (Appendices C and D) are suitable for measuring the slip resistance of gratings, heavily profiled surfaces and resilient surfaces. Appendix E contains an ancillary test method for determining the displacement volume of heavily profiled surfaces. Such surfaces are primarily intended to provide drainage or entrapment of anticipated contaminant materials. Heavily profiled surfaces should still take into consideration any requirements contained in AS 1428 or NZS 4121, such as tripping hazards.
- 2 The test methods in Appendices A and B may not apply to heavily profiled surfaces where the surface has been specifically manufactured to be highly slip resistant. Some examples of highly profiled surfaces are shown in Figure 1. Such surfaces generally have a displacement volume greater than or equal to  $4 \text{ cm}^3/\text{dm}^2$ .
- 3 Appendix A, provides for either of two rubbers to be used in the wet pendulum test method. Clay and concrete pavers have traditionally been tested using TRL (formerly TRRL) rubber, whereas Four S rubber is used for other pedestrian surface materials.
- 4 Caution should be exercised when interpreting individual dry floor friction results, which may be unexpectedly high on some very smooth flat surfaces because, after installation, the presence of contaminants could significantly alter some results.