

Australian Standard[®]

Slip resistance classification of new pedestrian surface materials



This Australian Standard® was prepared by Committee BD-094, Slip Resistance of Flooring Surfaces. It was approved on behalf of the Council of Standards Australia on 16 May 2013. This Standard was published on 28 June 2013.

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 - Australian Institute for Non-Destructive Testing
 - Australian Institute of Architects
 - Australian Resilient Floorcovering Association
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Slip resistance classification of new pedestrian surface materials

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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 4586:2004, *Slip resistance classification of new pedestrian surface materials*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

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.

This revision incorporates an additional requirement for preparing rubber test sliders when testing smooth surfaces. Consequential changes to the nomenclature used for classifying surfaces have been included.

Appendix D will be subjected to revision in consideration of long-term availability of shoes.

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

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

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

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 relative contribution of a pedestrian surface to the overall risk of slipping; they will assist in the specification of a minimum slip resistance category for 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.

This Standard does not provide for the conditioning of specimens to account for in-service wear.

When specifying a particular slip resistance classification, specifiers should consider the likely in-service wear and its effects on slip resistance, taking into account the material type, pedestrian and other traffic and environmental conditions including cleaning and sealing.

Additional accelerated wear conditioning may help specifiers to better understand how the slip resistance of an individual product may alter with wear, thus helping to differentiate between products that might otherwise have seemingly similar slip resistance characteristics. This Standard provides no guidance on the conduct of such accelerated conditioning procedures.

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.

Wet pendulum friction testing is carried out using two types of rubber materials, Slider 55 (also known as TRL rubber), which has been traditionally used for testing outdoor surfaces and wet barefoot surfaces, and Slider 96 (also known as Four S rubber), which was specifically developed to replace the TRL rubber for testing smoother indoor surfaces, as it provides greater discrimination between such internal surfaces.

This revision incorporates an additional requirement for preparing rubber test feet when testing smooth surfaces. Research has shown that when a slider 96 (Four S rubber) is only prepared with P400 abrasive paper, the pendulum result on smoother surfaces may be more representative of the rubber roughness than the slip resistance of the pedestrian surface that is being tested. A more representative reading that also enables a greater level of discrimination between smoother surfaces may be obtained by preparing the slider on a 3 µm lapping film as detailed in the Standard. A slider prepared in this way is a closer representation of a worn and polished heel and may best reflect the lower slip resistance attributable to the contact of two smoother surfaces under water-wet conditions.

Adoption of the lapping film preparation enables better differentiation between potentially slippery surfaces than was previously the case. It will result in some products receiving a lower classification than when the product was tested according to AS/NZS 4586:2004. This is recognized in the guidance provided in HB 197.

A new pedestrian surface is considered to become an existing pedestrian surface 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 pedestrian surfaces is covered in AS 4663, *Slip resistance measurement of existing pedestrian surfaces*.

STANDARDS AUSTRALIA

Australian 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, D and E. The test methods enable characteristics of surface materials to be determined in either wet or dry conditions.

This Standard does not provide for the conditioning of specimens to account for in-service wear.

NOTE: When specifying a particular slip resistance classification, specifiers should consider the likely in-service wear and its effects on slip resistance, taking into account the material type, pedestrian and other traffic and environmental conditions including cleaning, sealing and carpet wear and stretch.

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

As a minimum, one of the three methods specified for the measurement of wet slip resistance (Appendix 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.

NOTES:

- 1 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.
- 2 The inclining ramp test methods (Appendices C and D) are suitable for measuring the slip resistance of gratings, heavily profiled surfaces, tactile indicators, rock, bush-hammered 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 contaminating materials. Heavily profiled surfaces should take into consideration any requirements of AS 1428.1, such as tripping hazards.
- 3 Where heavily profiled surfaces have been specifically manufactured to have a high slip resistance, that relies heavily upon the interlock action between the highly profiled pedestrian surface and the heavily profiled soles of some footwear, the 'pendulum test' method in Appendix A may not provide accurate indications of the slip resistance.
- 4 The 'dry floor friction' test method in Appendix B is not suitable for heavily profiled surfaces or carpets.
- 5 Some examples of highly profiled surfaces are shown Figure 1. Such surfaces generally have a displacement volume greater than or equal to $4 \text{ cm}^3/\text{dm}^2$.
- 6 Dry results, including those determined using the 'dry floor friction' test method in Appendix B, that are obtained on dry new surfaces without any contamination may be unreliable in predicting in-service behaviour of surfaces that subsequently become wet or contaminated.

- 7 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 Slider 55 (TRL rubber), whereas Slider 96 (Four S rubber) is used for other pedestrian surfaces. When testing highly profiled surfaces such as shown in Figure 1, Slider 55 (TRL rubber) generally produces more consistent results than Slider 96 (Four S rubber). The standard Slider 96 (Four S rubber) was prepared so as to have a poor abrasion resistance such that the rubber would be less likely to become contaminated, as fresh surfaces would be produced during testing. It was also formulated to be temperature independent. When assessing products for wet barefoot areas, or unusually rough products, the use of the softer more resilient Slider 55 (TRL rubber) is preferable.
- 8 Caution should be exercised when comparing friction/slip resistance test results of existing pedestrian surfaces and test results that were obtained on new pedestrian surface materials. The latter may be unexpectedly high on some surfaces because, after installation, the presence of contaminants and surface wear and/or polishing can significantly alter some results.

3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS

- 1428 Design for access and mobility
- 1428.1 Part 1: General requirements for access—New building work
- 1683 Methods of test for elastometers
- 1683.15.1 Method 15.1: International rubber hardness
- 3942 Quality control—Variables charts—Guide
- 4663 Slip resistance measurement of existing pedestrian surfaces

ISO

- 7619 Rubber, vulcanized or thermoplastic—Determination of indentation hardness
- 7619-1 Part 1: Durometer method (Shore hardness)

BS

- 7976 Pendulum testers
- 7976-3 Part 3: Method of calibration

CEN

- EN ISO 20345 Personal Protective Equipment—Safety Footwear (ISO 20345:2011)

CEN/TS

- 16165 Determination of Slip Resistance of Pedestrian Surfaces—Methods of Evaluation

4 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

4.1 British Pendulum Number (BPN)

Dimensionless unit of slip resistance when measured using the pendulum friction tester.

4.2 Carpet

Heavy fabric floor covering of wool, nylon or similar material, with or without underlay.

4.3 Coefficient of friction (COF)

The ratio of the tangential force required to move a body across a horizontal surface to the vertical load imposed on the surface by the body.

4.4 Displacement space

The open cavity that is accessible below the walking surface of a pedestrian surface, which is designed to allow sub-surface drainage and entrapment of spillages, thereby helping to retain the anti-slip properties of the walking surface.

4.5 Dynamic coefficient of friction

The coefficient of friction required to maintain movement at a constant speed.

4.6 Friction

An intrinsic property of the two interfacing, interacting surfaces resulting from their micro- and macro-roughness, inter- and intra-molecular forces of attraction and repulsion, and their visco-elastic properties.

4.7 Industrial work area

An area from which the public is generally excluded, and in which there may be an increased risk of slipping on the pedestrian surface due to a high incidence of substances such as grease, oil, water, foodstuffs, food residues, dust, flour or vegetable waste.

4.8 Nosing

A device intended to improve the slip resistance of the leading edge of a step.

4.9 Profiled surface

A surface with a designed raised geometrical pattern, which provides volumetric displacement.

NOTE: For example of profiled surfaces, see Figure 1.

4.10 Slip resistance

Frictional force opposing movement of an object across a surface, usually with reference to the sole or heel of a shoe on a pedestrian surface.

4.11 Slip resistance value (SRV)

The mean BPN value for the sample that has been tested and calculated in accordance with Appendix A, regardless of whether the surface was level or on a slope.

4.12 Slip resistive

Property of a pedestrian surface where the available friction is sufficient to enable a person to traverse that surface without an unreasonable risk of slipping.

4.13 Slope correction value (SCV)

The adjusted SRV when the slip resistance of a sloping surface of known maximum gradient is measured, which gives a value equivalent to that of the equivalent SRV for a level surface.

4.14 Slope design value (SDV)

The mean BPN value required on a slope of a known maximum gradient.

4.15 Step tread

The horizontal surface of a step.

4.16 Structured surface

A constructed surface with distinct irregularities within the surface profile.

4.17 Wet-barefoot area

An area in which the pedestrian surfaces are generally wet and walked on by people in bare feet.

NOTE: Wet-barefoot areas include swimming pool surrounds and are typically found in recreational buildings used by the public, communal showers, washrooms and changing rooms. Similar facilities are also found in some industrial and commercial buildings.

5 CLASSIFICATION OF SLIP RESISTANCE

5.1 Slip resistance

Pedestrian surfaces shall be classified using at least one of the combinations given in Table 1 and shall be reported as noted.

When this Standard is used for the testing and classification of the slip resistance of carpets (or carpet-like products) in potentially wet locations, the carpet shall be tested using the wet pendulum test method set out in Appendix A, and shall be reported as such.

When this Standard is used for the testing and classification of the slip resistance of carpets in dry locations, the test shall be carried out in the dry condition using the pendulum test method set out in Appendix A modified in accordance with Paragraph A2, and shall be reported as such.

The 'dry floor friction' test method in Appendix B is not suitable for heavily profiled surfaces or carpets.

5.2 Compliance

The surface shall comply with the stated classification for the test method and test rubber that is nominated and declared by the manufacturer or supplier.

The testing and classification of new pedestrian surface materials shall be in accordance with one or more of Tables 2, 3, 4 or 5.

TABLE 1
TEST AND CLASSIFICATION COMBINATIONS

Test conditions	Test method	Classification table to be used
Wet pendulum	Appendix A	Table 2
Wet pendulum and dry floor friction	Appendices A and B	Tables 2 and 3
Dry floor friction	Appendix B	Table 3
Wet-barefoot inclining platform	Appendix C	Table 4
Oil-wet inclining platform	Appendix D	Table 5

TABLE 2
CLASSIFICATION OF PEDESTRIAN
SURFACE MATERIALS ACCORDING
TO THE AS 4586 WET PENDULUM TEST

Class	Pendulum SRV (see Note 1)	
	Slider 96	Slider 55
P5	>54	>44
P4	45–54	40–44
P3	35–44	35–39
P2	25–34	20–34
P1	12–24	<20
P0	<12	

NOTES:

- 1 While Slider 96 or Slider 55 rubbers may be used, the test report shall specify the rubber that was used.
- 2 It is expected that these surfaces will have greater slip resistance when dry.
- 3 SDV may be calculated by using the tables that are given in Appendix F, and the minimum SRV that is considered appropriate for a level surface (see examples given in Appendix F).

TABLE 3
CLASSIFICATION OF PEDESTRIAN SURFACE
MATERIALS ACCORDING TO THE
DRY FLOOR FRICTION TEST

Classification	Floor friction tester mean value
D1	≥ 0.40
D0	< 0.40

TABLE 4
CLASSIFICATION OF PEDESTRIAN SURFACE
MATERIALS ACCORDING TO THE
WET-BAREFOOT INCLINING
PLATFORM TEST

Classification	Angle, degrees
No Classification	$< \alpha_{\text{barefoot}}$ Verification Surface A
A	$> \alpha_{\text{barefoot}}$ Verification Surface A $< \alpha_{\text{barefoot}}$ Verification Surface B
B	$\geq \alpha_{\text{barefoot}}$ Verification Surface B $< \alpha_{\text{barefoot}}$ Verification Surface C
C	$\geq \alpha_{\text{barefoot}}$ Verification Surface C

TABLE 5
CLASSIFICATION OF PEDESTRIAN
SURFACE MATERIALS ACCORDING
TO THE OIL-WET INCLINING
PLATFORM TEST

Classification	Angle, degrees
No Classification	<6
R9	≥6<10
R10	≥10<19
R11	≥19<27
R12	≥27<35
R13	≥35

TABLE 6
CLASSIFICATION OF DISPLACEMENT SPACE
ACCORDING TO DISPLACEMENT VOLUME
TEST METHOD

Surface-related minimum volume of displacement space cm ³ /dm ²	Displacement space assessment group
4	V4
6	V6
8	V8
10	V10

5.3 Means of demonstrating compliance

Pedestrian surfaces that are classified in accordance with Table 2 and, where appropriate, Table 3 shall meet the following criteria:

- (a) The mean test results shall be as follows:
- (i) For the classifications in Table 2, the mean of the test results shall be—
 - (A) within the relevant criteria set out in the table; and
 - (B) each individual result shall be equal to or above the lower limit for the classification or, if below the classification, within the mean of the result minus 20%.

If either criteria is not met, the lot shall be considered to be of lower classification.

- (ii) For Classification D1 in Table 3—
 - (A) the mean of the test results shall be equal to or greater than 0.4; and
 - (B) each individual slope corrected result shall be equal to or greater than 0.35.

If either of these criteria is not met, the lot shall be considered to be Classification D0.

- (b) The classification in accordance with Table 2 or 3 shall be determined by—
 - (i) selecting and testing at least five specimens at random as specified in Appendices A and B; or
 - (ii) carrying out continuous testing and process control in accordance with AS 3942.
- (c) When testing individual lots, if a particular test fails to produce the expected classification it shall be permissible to—
 - (i) disregard the first sample, resample a minimum of 10 specimens from the whole lot, retest and apply the criteria to the new sample; or
 - (ii) subdivide the lot into smaller lots of different quality, resample, retest and reclassify each of the smaller lots.

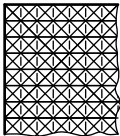
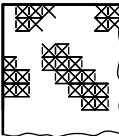
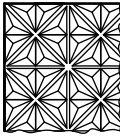
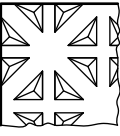
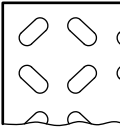
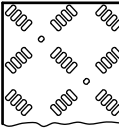
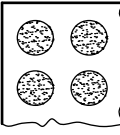
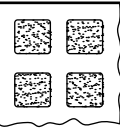
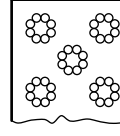
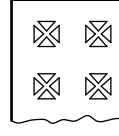
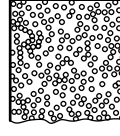
Type of profile	Pyramids	Interrupted pyramids	Tetrahedrons	Interrupted tetrahedrons
Top view				
Cross-section				
Type of profile	Webs	Interrupted webs	Studs	
Top view				
Cross-section				
Type of profile	Interrupted cams resp. nubs		Hemispheres	
Top view				
Cross-section				

FIGURE 1 EXAMPLES OF HIGHLY PROFILED SURFACES
(Not to scale)

APPENDIX A
WET PENDULUM TEST METHOD
(Normative)

A1 SCOPE

This Appendix sets out the method for the measurement of the frictional characteristics of new pedestrian surface materials under wet conditions using a pendulum friction tester.

A2 CARPETS

When this pendulum test method is used for the measurement of the frictional characteristics of new carpet or 'carpet-like' surface materials, the presence of any underlay and the condition of the surface shall be reported.

When this pendulum test method is used for the measurement of frictional characteristics of new carpet or 'carpet-like' surface material that is intended for use in only dry conditions, the following variations to the test method shall apply:

- (a) The test surface shall be tested dry (not saturated with potable water).
- (b) The surface contact length for the slider shall be determined with the slider resting on the surface (not held up so that the first and last contact with the rubber slider is at the top of the carpet pile).
- (c) Reporting of test values and classifications shall state 'Surface Tested Dry'.

A3 AGEING OR WEAR

If a product Standard or specification contains a requirement for the permanence of slip resistance, this requirement shall be determined after the appropriate accelerated ageing or wear testing procedure.

A4 PRINCIPLE

The frictional characteristics of each specimen shall be assessed by determining the wet dynamic friction between the specimen and the slider of a pendulum swinging in a vertical plane.

A5 APPARATUS

A5.1 Pendulum friction tester

A pendulum friction tester shall be constructed, and shall comply with the following:

NOTE: An example of a friction tester is shown in Figure A1.

- (a) All bearings and working parts of the instrument shall be enclosed as much as practicable, and all materials shall be suitably treated to prevent corrosion under wet conditions.
- (b) When not in use on site, the apparatus shall be used and stored in a dust-free environment that is not subject to significant temperature variations.

- (c) The pendulum friction apparatus shall be calibrated to ensure compliance with BS 7976-3 or CEN/TS 16165. After the apparatus has been calibrated, regular internal checking shall be conducted on a set of control specimens and the results recorded. When results obtained from the control specimens vary from the values established following calibration by more than three units, the apparatus shall be partially or completely recalibrated.

NOTES:

- 1 Calibration may be arranged through a suitable accredited laboratory proficient in calibration and repair of friction apparatus. Australian laboratory accreditation authorities have traditionally expected that equipment be calibrated at intervals not exceeding two years. However, submissions for the extension of calibration intervals are considered on the basis of factors such as history of stability, frequency of use, required accuracy, ability of staff to perform in-house checks, internal laboratory equipment assurance programs, and successful participation in proficiency testing programs.
 - 2 The control specimens should be stable with time and be of a range of surface roughness that are typical of the materials that the apparatus is used for measuring. New control specimens may benefit from having been subjected to an appropriate accelerated conditioning procedure.
- (d) The tester shall incorporate the following:
- (i) A spring-loaded rubber slider of the mass, size and shape specified in Paragraph A5.2, mounted on the end of the pendulum arm so that the sliding edge is 514 ± 3 mm from the axis of suspension.
 - (ii) Means for levelling the instrument.
 - (iii) Means for raising and lowering the axis of suspension of the pendulum so that the slider can—
 - (A) swing clear of the surface of the specimen; and
 - (B) be set to slide over a fixed length of surface.
 - (iv) Means for holding and releasing the pendulum arm so that it falls freely from a horizontal position.
 - (v) A pointer balanced about the axis of suspension, indicating the position of the pendulum arm throughout its forward swing and moving over the circular scale attached to the instrument. The mass of the pointer, excluding felt friction washers, shall be not more than 85 g and the friction in the pointer mechanism shall be adjustable so that with the pendulum arm swinging freely from a horizontal position, the outward tip of the pointer may be brought to rest on the forward swing of the arm at a point 10 ± 1 mm below the horizontal, the point corresponding to the zero position on the attached circular scale.

The mass of the swinging arm including the slider shall be 1.50 ± 0.03 kg with the centre of gravity lying on the axis of the arm at a distance of 410 ± 5 mm from the centre of suspension.

The slider shall be mounted on an axis set at an angle of $26 \pm 3^\circ$ to the horizontal when the pendulum is at the lowest point of its swing, so that only the rear edge of the slider contacts the test surface and the nominal static force on the slider is set by the calibration procedure.

Where required, a device for rigidly locating the specimens shall be provided so that—

- (A) the specimen is bisected by a vertical plane perpendicular to the frame of the instrument and passing through the axis of suspension of the pendulum; and
- (B) the full width of the slider backing plate will align with the specimen over a length of 124 ± 1 mm (see Figure A3).

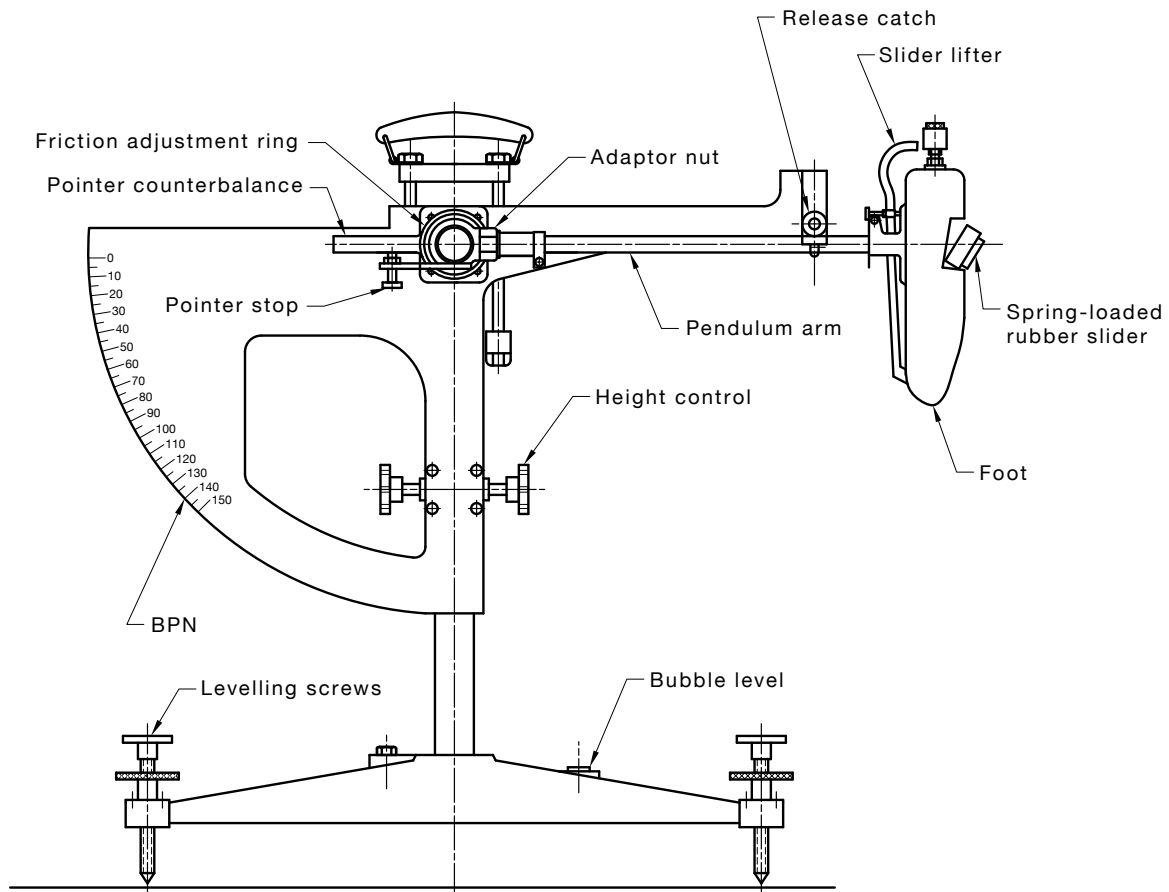


FIGURE A1 EXAMPLE OF PENDULUM FRICTION TESTER

A5.2 Sliders

A5.2.1 General

Sliders used in the friction tester shall be 25.4 ± 1.0 mm wide and 6.4 ± 0.50 mm thick and rigidly backed. The sliding edges shall be square, clean cut and free from contamination. Sliders shall be 76 ± 1.0 mm long and, with the rigid backing plate, shall have a total mass of 39 ± 2 g for Slider 96 and 35 ± 2 g for Slider 55.

A5.2.2 Slider material

The standard slider material shall be either Slider 96 (IRHD 96 ± 2 at $23 \pm 3^\circ\text{C}$) or Slider 55 (IRHD 55 ± 5 at 0 to 40°C).

When not in use, sliders shall be stored in the dark at a temperature below 25°C and preferably below 15°C . They shall be discarded when—

- (a) they are more than 12 months past the date of release by producer, unless they comply with the hardness requirements of ISO 7619-1;
- (b) they do not comply with the hardness requirements of ISO 7619-1; or
- (c) the chamfers worn on the two trailing edges of the slider are in excess of 4 mm wide.

The chamfer measurement shall be made on the most representative portion of the trailing edge.

NOTE: An example of a maximum permissible chamfer is shown in Figure A2.

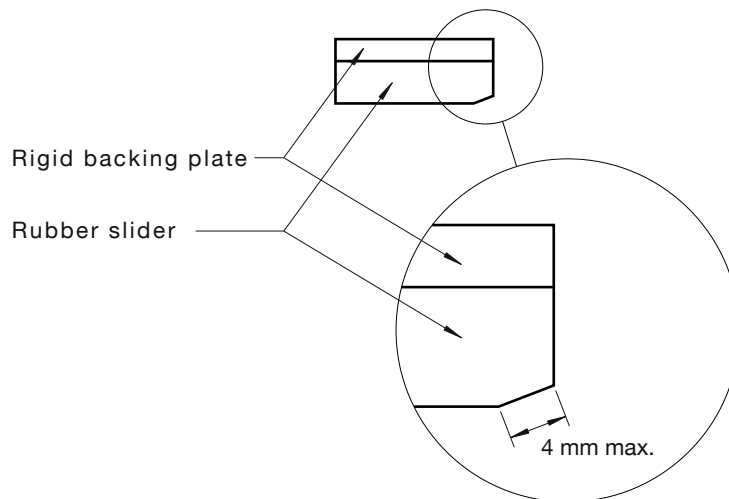


FIGURE A2 EXAMPLE OF THE MAXIMUM PERMISSIBLE EDGE CHAMFER

A5.3 Water spray bottle

Water spray bottle containing clean water at ambient temperature.

A5.4 Thermometer

Thermometer with a range of 0°C to 50°C.

A5.5 Abrasive paper

Wet and dry abrasive paper, Grade P 400, mounted on a flat rigid surface.

A5.6 Lapping film

Sheet of 3M 261X Imperial Lapping Film Grade 3MIC, mounted on a flat rigid surface.

NOTE: Equivalent products may be used, provided they can be shown to lead to the same results.

A5.7 Cleaning agents

Where it is assessed that the product is to be cleaned, appropriate cleaning agent(s) shall be used, depending on the state and type of contamination to be removed from the surface.

A6 PREPARATION OF SPECIMENS FOR LABORATORY TESTING

A6.1 Equipment adjustment

The equipment shall be adjusted as follows:

- Where possible, bring the apparatus (including the slider), specimens, contents of the water spray bottle and the temperature of the room in which friction testing is to be carried out to $20 \pm 5^\circ\text{C}$ at least 10 min before testing and maintain them at this temperature until testing is completed.
- Record the room temperature at the time of testing.
- Mount the tester on its base and adjust the levelling screws so that the levelling bubble is centred and the tester is appropriately aligned with the specimen.
- Install a rubber slider (see Paragraph A5.2) in position.
- Raise the axis of suspension of the pendulum so that the arm swings freely.
- Adjust the friction rings in the pointer mechanism so that, when the pendulum arm and pointer are released from the right-hand horizontal position, the pointer will zero repeatedly.

A6.2 Conditioning of sliders

Before testing each sample, each slider shall be conditioned as follows:

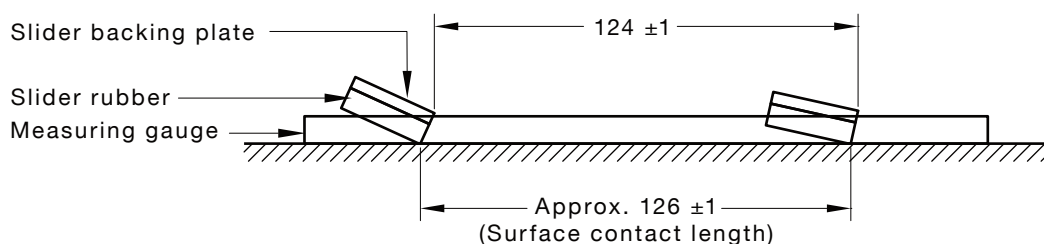
- (a) Secure a piece of abrasive paper (see Paragraph A5.5) beneath the slider.
- (b) Secure the slider on its pivot ensuring the correct positioning of the two washers and spring.
- (c) Check that the trailing edge of the slider is parallel to the minor axis of the abrasive paper when the pendulum hangs freely at rest.
- (d) Adjust the height of the axis of suspension of the pendulum so that the top trailing edge of the aluminium backing of the slider is aligned over the abrasive paper over a length of 124 ± 1 mm (see Figure A3).
- (e) Return the pendulum to its horizontal position and move the pointer against its horizontal stop.
- (f) Swing the pendulum along the dry surface of the abrasive paper as follows:
 - (i) Release the pendulum and pointer from the horizontal position, allowing them to swing over the abrasive paper.
 - (ii) Catch the pendulum as it falls back from its peak after the slider has traversed the abrasive paper.
NOTE: If the pendulum is not caught and the slider is not lifted before it hits the abrasive paper on the return swing, the slider will be damaged.
 - (iii) Return the pendulum and pointer to the horizontal position.
 - (iv) Repeat at least twice more (i.e. a minimum number of three swings) so that the rubber has a consistently chamfered surface.
 - (v) The surface of the abrasive paper should be brushed with a soft clean brush to remove any rubber particles.

The readings on the scale shall be within ± 2 of a consistent number lying within the range of 85 ± 10 for Slider 96 or 115 ± 10 for Slider 55 during the conditioning of the slider.

New sliders shall be given a chamfered edge by passing the slider 10 times across the abrasive paper which has been mounted on a flat rigid surface.

- (g) Condition the slider further using 10 swings over wet lapping film (see Paragraph A5.6).

NOTE: The readings on the scale for the last 5 readings should be in the range 61 ± 3 for Slider 96 and 55 ± 6 for Slider 55.



DIMENSIONS IN MILLIMETRES

FIGURE A3 SLIDER SURFACE CONTACT ALIGNMENT

A6.3 Test specimen

A6.3.1 General

The test specimen shall be mounted on a horizontal surface in such a way as to prevent its movement during the test.

For materials having a surface pattern or non-uniform texture (with regard to direction), testing shall be carried out in the direction expected to give the lowest British Pendulum Number (BPN). In such cases, testing in directions at 0°, 90° and 45° shall be carried out to determine if there is a bias due to anisotropic characteristics that may affect the reported SRV.

Testing shall be in the direction most likely to result in the lowest BPN, as follows:

- (a) Tiled surfaces or surfaces with many joints shall be tested at an angle of approximately 10° to 20° to the direction of the joints.
NOTE: This reduces the effect of grout joints and planarity within the test specimen.
- (b) Timber surfaces shall be tested parallel to the grain.
- (c) When testing other highly profiled surfaces such as tactile ground surface indicators (TGSIs), including directional indicators, the effect of the slider striking the sides of TGSIs shall be minimized. Testing shall be conducted at an angle of 30° to the line of indicators to maximize continuous contact with the top surface of TGSIs and minimizing slider drop-down between TGSIs.
- (d) If a step tread has a slip-resistant feature strip near the nosing that has a severe profile, such as castellated blocks, the direction of the testing shall be offset by about 10°.
- (e) Step treads shall be tested in the direction of pedestrian movement on stair descent, that is from the back of the product towards the nosing, including as much as possible of any slip-resistant feature strip near the edge of the nosing.

NOTE: Due to the physical geometry of stairs it may not be possible to conduct tests in the appropriate direction on a stair tread within a stair flight. However, if the top nosing of a flight of stairs and the associated landing surface treatment is the same as a typical stair, testing of the landing, nosing and surface may produce a test result similar to that which could be expected on a stair tread if testing were possible. For an example of testing stair tread or stair landing nosing, see Figure A8.