ISTS

Reduce Your Risk!®

Independent Slip Testing Services

GLOBAL PRODUCT CLASSIFICATION

TEST REPORT

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

AS 4586-2013
Appendix A - Wet Pendulum Testing

Prepared For:

Karndean Designflooring

Product Description:

Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl

Issue Date: 21-07-2025

+61 (0) 411 600 733 | +64 (0) 279 735 266 | www.gpcsliptesting.com.au

TEST REPORT- Wet Pendulum Slip Resistance Classification (Australian Standard)

Report Prepared for: Karndean Designflooring
835 Stud Road
Knoxfield VIC 3180

Program #: 8005

Test Date: 06-05-2025
Test Site: Independent Slip Testing Services- Slip Resistance Testing Facility (Lota Headquarters QLD Australia)
Testing Technician: J.Barnett
Testing Instrument: Pendulum Skid Tester with Slider 96 (4S) rubber. Reported Uncertainty for testing device: 3.0 BPN
Testing Instrument W1- Serial #: SK1105

TESTING SPECIMEN DESCRIPTION, SIZE, COLOUR, TYPE, & COATING (if applicable)
1. 1x Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl, Sample Size 23x25cm
2. 1x Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl, Sample Size 23x25cm
3. 1x Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl, Sample Size 23x25cm
4. 1x Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl, Sample Size 23x25cm
5. 1x Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl, Sample Size 23x25cm

Surface Condition:	Structured	**Cleaning:**	Tested as received
Fixed/ Unfixed:	Unfixed	**Rz Mean:**	n/a
Environmental Conditions:	Air conditioning	**Air Temp:**	24 Deg.C
Direction of Test:	As indicated on underside of sample	**Slope:**	n/a

AS 4586-2013

INTERPRETATION OF THE WET PENDULUM RESULTS	
Classification	**Pendulum mean BPN Slider 96 (4S) rubber**
P5	>54
P4	45-54
P3	35-44
P2	25-34
P1	12-24
P0	<12

TEST RESULTS (SRV)

#1 Result:	35 BPN	Slider condition (P400):	89 BPN
#2 Result:	36 BPN	Slider condition (Lapping):	63 BPN
#3 Result:	38 BPN	Temperature adjustment:	N/A
#4 Result:	34 BPN	Carpet surface tested dry:	N/A
#5 Result:	37 BPN		

CLASSIFICATION

CLASSIFICATION	SRV- PENDULUM MEAN BPN (Slider 96)
P3	**36**

The mean results of the five specimens is reported (rounded to nearest whole number)

^ An individual result both below the result classification and below the mean result minus 20% shall be considered of lower classification

Maximum Slope Design Value (when dry):	N/A
Maximum Slope Design Value (when wet):	N/A

^NCC Code provides reference for ramps up to 1:8

DISCLAIMER:
ISTS accepts no civil liability or responsibility for any actions whatsoever that may arise as a result of the tests and the publication and issue of this test report. The test report is intended for viewing purposes solely for the named recipient identified above. The slip test report remains the property of ISTS. This report contains privileged and confidential information. The unauthorised

Signatory: Mick Walton

Accredited for compliance with ISO/IEC 17025 testing and calibration. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

Accreditation No. 14967

Testing was carried out using the Wet Pendulum Test Method
in accordance with Australian Standard AS 4586-2013 Appendix A

TEST PRODUCT IMAGE

Product Description: Pavimento Avanti 4.5mm LVT 230x1500mm, Brown, Vinyl

Test Date: 06-05-2025



Accreditation No. 14967

MEASUREMENT UNCERTAINTY DETAILS				
WET PENDULUM TEST METHOD			DRY FRICTION TEST METHOD	
Standard Material	**Uncertainty (BPN)**		**Standard Material**	**Uncertainty (CoF)**
P400	0.09		P400	0.05
Lapping	0.08		Lapping	0.05
1A Float	0.49			
2A Pavigres	0.11			
3A Tile	0.08			
Accredited Calibration Certificate	3.00		*Accredited Calibration Certificate*	0.05
Uncertainties quoted at the 95% confidence interval, k=2				

END OF TEST REPORT

Have a successful day!

…Considering pedestrian surface enhancements, or developing your property?

If you are selecting, purchasing or installing pedestrian surface materials, an independent, accredited classification is a useful tool providing confidence to all stakeholders the product will perform as specified.

Independent Slip Testing Services is the global leader in accredited slip resistance measurement and classification of pedestrian surface materials prior to installation.

see the ISTS 'GPC Results Interpretation Booklet' for guidance on pedestrian surface product selection.

TILES PAVERS STONE TIMBER VINYL RUBBER METAL TAPES COATINGS GRATINGS CONCRETE CARPETS STEP-NOSINGS TACTILES MOSAICS GLASS

Contact us any time if you have questions.



Recommended Slip Classifications
National & Global Guides
Slope Conversions
GET IT ON Google Play
Download on the App Store
www.gpcsliptesting.com

ISTS
Reduce Your Risk!®
Independent Slip Testing Services
GLOBAL PRODUCT CLASSIFICATION

Independent Slip Testing Services

+61 (0) 411 600 733 | +64 (0) 279 735 266 | www.gpcsliptesting.com

WET TEST RESULTS INTERPRETATION GUIDE (Part 1)- NATIONAL CONSTRUCTION CODE (AUSTRALIAN STANDARD)- Appendix A

INTERPRETING WET TEST RESULTS

How to interpret your wet test report…

Wet test results offer six possible outcomes- classification '**P0', 'P1', 'P2', 'P3', 'P4'** or '**P5**'.

The classification 'P0' reflects a lesser slip resistant surface, while 'P5' classification reflects the greatest slip resistance classification.

There are two parts to this interpretation guide- Firstly the 'National Construction Code requirements', and secondly 'Other Particular Applications' recommendations.

For the 'Global Product Classification' test results refer additional #Note below.

Step 1. Note the test location described in the left side column of your report, and the corresponding test result 'P' classification achieved (listed in the far right side column)

Step 2. From this interpretation guide, identify the most appropriately related location description described in either 'TABLE 3A' (Part 1) or 'TABLE 3B' (Part 2) . Note the 'P' classification listed to the right of this description.

Step 3. If the test result classification listed meets (or exceeds) the related 'P' classification from 'TABLE 3A' or 'TABLE 3B', the test surface is meeting the relevant requirement.

#Note. For 'Global Product Classification' test reports the 'TABLE 3A' or 'TABLE 3B' descriptions assist in identifying the product's suitability for various applications.

* TABLE 3A

NATIONAL CONSTRUCTION CODE COMPLIANCE CLASSIFICATIONS

Minimum wet pendulum test result classifications to meet National Construction Code requirements.

Location	Classification
Stair Treads and Stairway Landings in Buildings - Covered by NCC Volumes 1 - 2	
1. Stair treads and a stairway landing (when dry)	P3
2. Stair treads and a stairway landing (when wet)	P4
Nosings for Stair Treads and Landings in Buildings - Covered by NCC Volumes 1 - 2	
1. Dry stair tread, a stair non-skid nosing strip and a stairway landing	P3
2. Wet stair tread, a stair non-skid nosing strip and a stairway landing	P4
Ramps in Buildings - Covered by NCC Volumes 1 - 2	
1. Ramps not steeper than 1:14 (4.1 degrees) gradient (when dry)	P3
2. Ramps not steeper than 1:14 (4.1 degrees) gradient (when wet)	P4
3. Ramps steeper than 1:14 (4.1degrees)up to but not steeper than 1:8 (7.1 degrees) (when dry)	P4
4. Ramps steeper than 1:14 (4.1degrees) up to but not steeper than 1:8 (7.1 degrees) (when wet)	P5

***TABLE 2** Classification of Pedestrian Surface Materials according to the AS 4586-2013 wet pendulum test

CLASSIFICATION	Pendulum* mean BPN	
	Slider 96 (Four S rubber)	Slider 55 (TRL rubber)
P5	**>54**	>44
P4	**45-54**	40-44
P3	**35-44**	35-39
P2	**25-34**	20-34
P1	**12-24**	< 20
P0	**<12**	-

TREATMENT OPTIONS

For test results that achieve a result below recommendations, the following treatment options are available to increase slip resistance and Reduce Your Risk!

While ISTS is solely an audit service, following is a short list of common types of treatments we see our clients using to improve the slip resistance of various pedestrian surface materials.

Cleaning procedures	Minimising detergent residue build up or other contaminants.
Acid etching	Increasing surface texture.
Coatings and sealers	Surface coatings and penetrative types.
Surface texture	Coatings, etchants, sandblasting, shot blasting, etc.
Surface replacement	May be the most cost effective option in some instances.

An internet search for 'flooring treatments' will identify surface treatment professionals in your local area. ISTS recommends sourcing a number of detailed proposals when considering treatments, outlining expected slip resistance improvements, visual changes, clean ability and life expectancy.

ADDITIONAL NOTES & REFERENCES

nb. Test specimens are disposed after two weeks if not collected by client

References

*Table 3A- HB198:2014 "Guide to the specification and testing of slip resistance of pedestrian surfaces" Standards Australia Limited 2014.

*Table 2- AS 4586-2013 "Slip resistance classification of new pedestrian surface materials".

nb. The information provided is intended as a guide only, consult the referenced publications for further information in regards to measurement results and recommendations.

ISTS
Reduce Your Risk!®
Independent Slip Testing Services
GLOBAL PRODUCT CLASSIFICATION

Independent Slip Testing Services

+61 (0) 411 600 733 | +64 (0) 279 735 266 | www.gpcsliptesting.com

WET TEST RESULTS INTERPRETATION GUIDE (Part 2)- OTHER APPLICATIONS...NON NCC (AUSTRALIAN STANDARD)- Appendix B

* TABLE 3B

Minimum wet pendulum test result classifications for other applications where the NCC does not apply.

Location		Classification
External Pavements and Ramps		
1. External ramps including sloping driveways, footpaths etc. steeper than 1 in 14 (4.1^0)		P5
2. External ramps including sloping driveways, footpaths, etc., under 1:14 (4.1^0), external sales areas (eg. markets), external car park areas, external colonnades, walkways, pedestrian crossings, balconies, verandas, carports, driveways, courtyards and roof decks		P4
3. Undercover car parks		P3
Hotels, Offices, Public Buildings, Schools and Kindergartens		
1. Entries and access areas including…	*Wet area*	P3
hotels, offices, public buildings, schools, kindergartens,	*Transitional area*	P2
internal lift lobbies and common areas of public buildings	*Dry area*	P1 (see Note 3)
2. Toilet facilities in offices, hotels and shopping centres		P3
3. Hotel apartment bathrooms, ensuites and toilets		P2
4. Hotel apartment kitchens and laundries		P2
Loading Docks, Commercial Kitchens, Cold Stores, Serving Areas		
1. Loading docks under cover and commercial kitchens		P5
2. Serving areas behind bars in public hotels and clubs, cold stores and freezers		P4
Supermarkets and Shopping Centres		
1. Fast food outlets, buffet food servery areas, food courts and fast food dining areas in shopping centres		P3
2. Shop and supermarket fresh fruit and vegetables area		P3
3. Shop entry areas with external entrances		P3
4. Supermarket aisles (except fresh food areas)		P1 (see Note 3)
5. Other separate shops inside shopping centres - wet		P3
6. Other separate shops inside shopping centres - dry		P1 (see Note 3)
Swimming Pools and Sporting Facilities		
1. Swimming pool ramps and stairs leading to water		P5
2. Swimming pool surrounds and communal shower rooms		P4
3. Communal changing rooms		P3
4. Undercover concourse areas of sports stadiums		P3
Hospitals and Aged Care Facilities		
1. Bathrooms and ensuites in hospitals and aged care facilities		P3
2. Wards and corridors in hospitals and aged care facilities		P2

***TABLE 2** Classification of Pedestrian Surface Materials according to the AS 4586-2013 wet pendulum test

Classification	Pendulum* mean BPN	
	Slider 96 (Four S rubber)	Slider 55 (TRL rubber)
P5	**>54**	>44
P4	**45-54**	40-44
P3	**35-44**	35-39
P2	**25-34**	20-34
P1	**12-24**	< 20
P0	**<12**	-

P1 (see Note 3)

Note 3.

The minimum classification listed in Table 3B is P1. It is inappropriate for Table 3B to list the lower classification, P0, since there is no lower limit on Classification P0.

Notwithstanding, some smooth and polished floor surfaces, which do not achieve Classification P1, may be considered to provide a safe walking environment for normal pedestrians walking at a moderate pace, provided the surface is kept clean and dry; however, should these surfaces become contaminated by either wet or dry materials, or be used by pedestrians in any other manner, then they may become unsafe. Therefore, the type of maintenance, the in-service inspection of floors, other environmental conditions and use should be taken into account when selecting such products.

ADDITIONAL NOTES & REFERENCES

nb. Test specimens are disposed after two weeks if not collected by client

References

*Table 3B- HB198:2014 "Guide to the specification and testing of slip resistance of pedestrian surfaces" Standards Australia Limited 2014.

*Table 2- AS 4586-2013 "Slip resistance classification of new pedestrian surface materials".

nb. The information provided is intended as a guide only, consult the referenced publications for further information in regards to measurement results and recommendations.

Independent Slip Testing Services

+61 (0) 411 600 733 | +64 (0) 279 735 266 | www.gpcsliptesting.com

ISTS Reduce Your Risk!® Independent Slip Testing Services
GLOBAL PRODUCT CLASSIFICATION

DRY TEST RESULTS INTERPRETATION GUIDE (AUSTRALIAN STANDARD)- Appendix C

INTERPRETING DRY TEST RESULTS

How to interpret your dry test report…

Dry test results offer two possible outcomes- classification **'D0'** or classification **'D1'**.

The classification 'D0' reflects a less slip resistant surface, while the recommended 'D1' classification reflects a greater slip resistant surface.

Step 1. Note the test location described in the left side column of your report, and the corresponding test result classification achieved (listed in the far right side column).

Step 2. If the test result classification listed is 'D1', the test surface is meeting the relevant recommendations.

FREQUENTLY ASKED QUESTIONS

1. **The mean test average is ≥0.40, however the result is 'D0' classification ?**
   - A. *The mean of the test results should be equal to or greater than 0.40 and each individual result should be equal to or greater than 0.35. If either of this criteria is not met, the lot shall be considered to be 'D0' classification.*
2. **What does * and ** mean?**
   - A. ** Indicates part of a test run registered under 0.40.*
     *** Indicates part of a test run registered less than 0.35 resulting in a compulsory 'D0' classification.*
3. **Why are test results rounded to the nearest 0.05?**
   - A. *As described in the relevant standards, the mean result of Test 1 & Test 2 is rounded to nearest 0.05.*
4. **What is the classification requirement for particular locations as stated in publication #HB198:2014?**
   - A. *The Australian testing standards provide classification criteria for dry test results. Handbook HB198 does not provide interpretation of dry test results.*
5. **How about dry testing for external areas?**
   - A. *Dry slip resistance measurement does not apply to external surfaces. If a pedestrian surface is likely to become wet and remain wet for any significant period of time, wet pendulum testing is the appropriate test method.*
6. **How do I improve the slip resistance of a surface currently achieving 'D0' classification?**
   - A. *Many treatments and procedures are available to improve slip resistance. Treatment options will vary depending on the type of surface and whether a sealed or unsealed finish is required. Described on the right are a list of options to improve slip resistance and Reduce Your Risk!*

***TABLE 3** Classification of Pedestrian Surface Materials according to the AS 4586-2013 dry floor friction test

Classification Result (AS 4586-2013)	Test Result Mean Value (COF)
D1	**≥ 0.40**
D0	**< 0.40**

TREATMENT OPTIONS

For test results that achieve a result below recommendations, the following treatment options are available to increase slip resistance and Reduce Your Risk!

While ISTS is solely an audit service, following is a short list of common types of treatments we see our clients using to improve the slip resistance of various pedestrian surface materials…

Cleaning procedures	Minimising detergent residue build up or other contaminants.
Acid etching	Increasing surface texture.
Coatings and sealers	Surface coatings and penetrative types.
Surface texture	Coatings, etchants, sandblasting, shot blasting, etc.
Surface replacement	May be the most cost effective option in some instances.

An internet search for 'flooring treatments' will identify surface treatment professionals in your local area. ISTS recommends sourcing a number of detailed proposals when considering treatments, outlining expected slip resistance improvements, visual changes, clean ability and life expectancy.

ADDITIONAL NOTES & REFERENCES

nb. Test specimens are disposed after two weeks if not collected by client

References

*Table 3- AS 4586-2013 "Slip resistance classification of new pedestrian surface materials".

#HB198:2014 "Guide to the specification and testing of slip resistance of pedestrian surfaces".

nb. The information provided is intended as a guide only, consult the referenced publications for further information in regards to measurement results and recommendations.