

**ATTAR TEST REPORT NUMBER: 14/7886.1**

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025. Accreditation Number: 2735

23 May 2014

Total Pages: 2**DRY SLIP RESISTANCE**

Job No: M14/7886

Prepared for:	Tredsafe PO Box 832242 GLENDENE AUCKLAND 0652 NEW ZEALAND		
Attention:	Lars Jacobsen		
Test Site:	ATTAR, Unit 1, 64 Bridge Road, Keysborough.		
Test Date:	20 May 2014		
Test Specimens, Size and Quantity:	Stair nosing insert – PVC type ridged pyramid finish, 500x1000 mm, 8 off supplied.		
Sampling and Direction of Test:	Sampling conducted by client. Test direction not applicable. Refer to Figure 1.		
Test Personnel:	Douglas Lehne		
Preparation:	Washed with water and pH neutral detergent, rinsed with water, then dried.		
Fixed/Unfixed:	Unfixed		
Air Temperature:	22°C		
Test Equipment:	Tortus Floor Friction Tester; Tortus Model Mk II (with integral printer), Serial No: 233.		
Test Standard:	AS 4586: 2013 Slip resistance classification of new pedestrian surface materials – Appendix B.		
Slider Rubber:	Slider 96 Batch No. 50		
Classification Criteria:	Refer to Classification Criteria, attached as Appendix 1.		
Dynamic Coefficient of Friction	Run 1	Run 2	Mean Rounded to 0.05
	0.76	0.74	0.75
Classification:	D1		

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

ATTAR

Douglas Lehne
Floor Slip Tester
Approved Signatory

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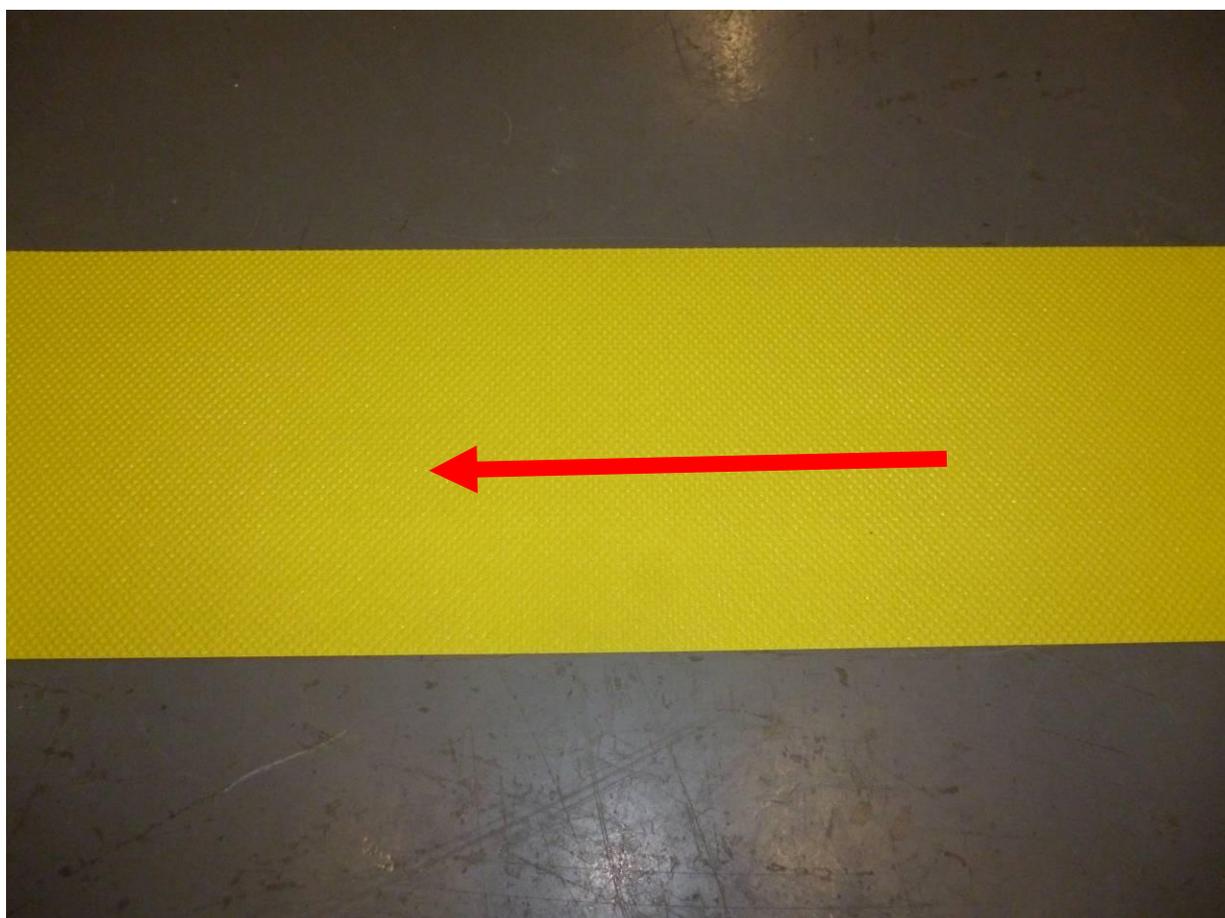


Figure 1: Stair nosing insert – PVC type ridged pyramid finish.
Arrow indicates direction of test.

**ATTAR TEST REPORT NUMBER: 14/7886.2**

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23rd May 2014**Total Pages: 2****WET SLIP RESISTANCE**

Job No: M14/7886

Prepared for:	Tredsafe PO Box 832242 GLENDENE AUCKLAND 0652 NEW ZEALAND					
Attention:	Lars Jacobsen					
Test Site:	ATTAR, Unit 1, 64 Bridge Road, Keysborough.					
Test Date:	20 th May 2014					
Test Specimens, Size & Quantity:	Stair nosing insert – PVC type ridged pyramid finish, 500x1000 mm, 8 off supplied.					
Sampling & Direction of Testing:	Sampling conducted by client. Test direction not applicable. Refer to Figure 1.					
Test Personnel:	Douglas Lehne					
Preparation:	Washed with water and pH neutral detergent, rinsed with water, then dried.					
Fixed/Unfixed:	Unfixed.					
Air Temperature:	23°C					
Test Equipment:	Munro Stanley Skid Resistance Tester (Pendulum) Serial Number 9359, Calibrated 14/10/2013.					
Test Standard:	AS 4586: 2013 Slip resistance classification of new pedestrian surface materials – Appendix A.					
Slider Rubber:	Slider 96 Batch No. #52 prepared on P400 & 3µm lapping film.					
Classification Criteria:	Refer to Classification Criteria, attached as Appendix 1.					
British Pendulum Number	Specimen Number					SRV
	1	2	3	4	5	
	46	46	48	49	46	47
Classification:	P4					

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

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Douglas Lehne
Floor Slip Tester
Approved Signatory

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23rd May 2014

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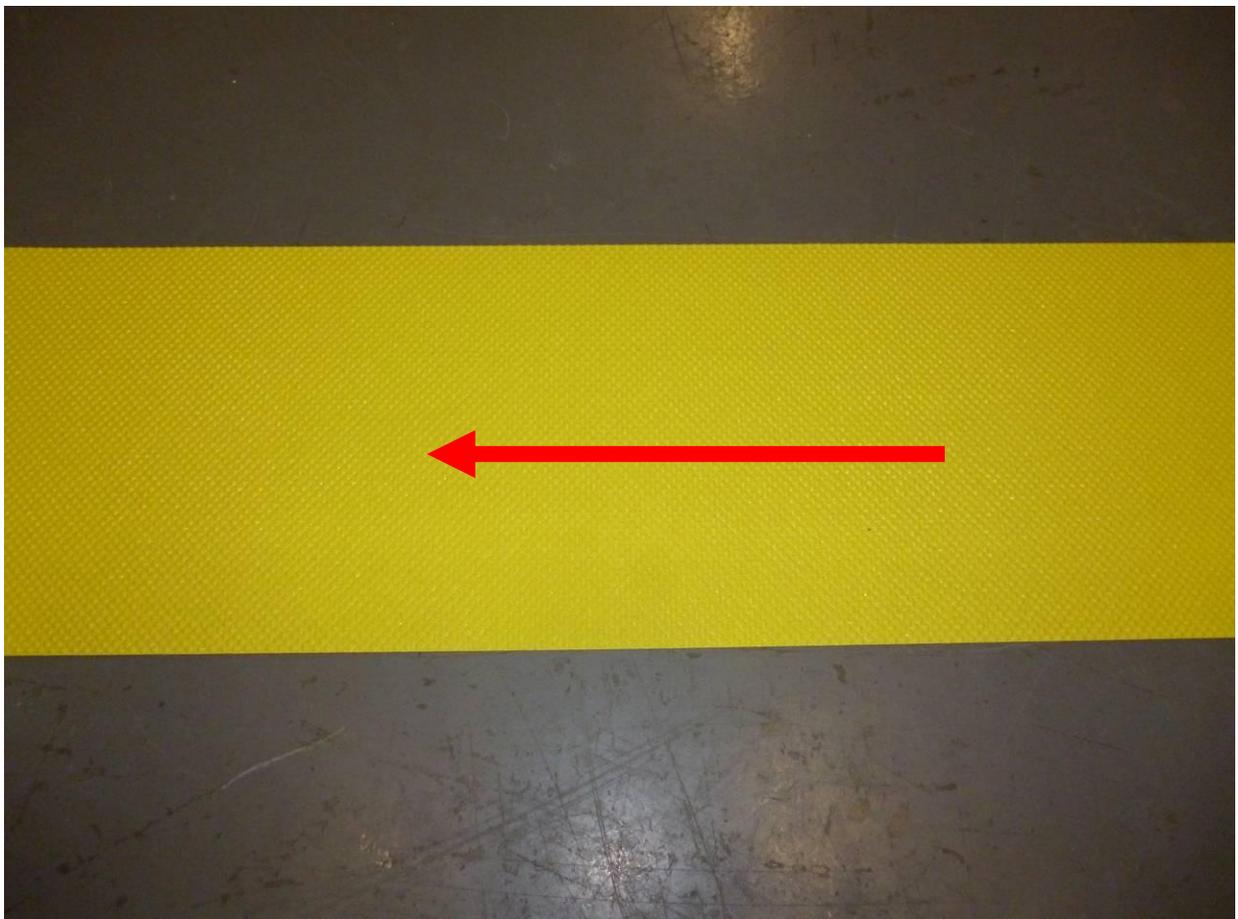


Figure 1: Stair nosing insert – PVC type ridged pyramid finish.
Arrow indicates direction of test.

**ATTAR TEST REPORT NUMBER: 14/7886.3**

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23rd May 2014**Total Pages: 2****WET - BAREFOOT INCLINING PLATFORM**

Job No: M14/7886

Prepared for:	Tredsafe PO Box 832242 GLENDENE AUCKLAND 0652 NEW ZEALAND	
Attention:	Lars Jacobsen	
Test Site:	ATTAR, Unit 1, 64 Bridge Road, Keysborough.	
Test Date:	19 th May 2014	
Manufacturer:	Unknown	
Test Specimen, Size & Quantity Received:	Stair nosing insert – PVC type ridged pyramid finish, 500x1000 mm, 8 off supplied.	
Sampling & Direction of Testing:	Sampling conducted by client. Test direction not applicable. Refer to Figure 1.	
Test Personnel:	Marcus Braché and Chris Peake	
Preparation:	Washed with water and pH neutral detergent, rinsed with water, then dried.	
Fixed/Unfixed	Fixed	
Joint Width:	N/A	
Air Temperature:	23°C	
Water Temperature:	28°C	
Test Standard:	AS 4586 - 2013 Slip resistance classification of new pedestrian surface materials – Appendix C.	
Surface Structure :	Profiled.	
Calibration Board:	Actual Mean	Reported Mean Rounded down to the nearest whole number
A	13.1°	13°
B	18.4°	18°
C	24.0°	24°
Test Specimen Actual Mean:	30.5°	
Mean Angle of Inclination: Rounded down to the nearest whole number	30°	
Slip Resistance Quality Group:	C	

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

ATTAR

Marcus Braché
Senior Engineering Technician
Approved Signatory

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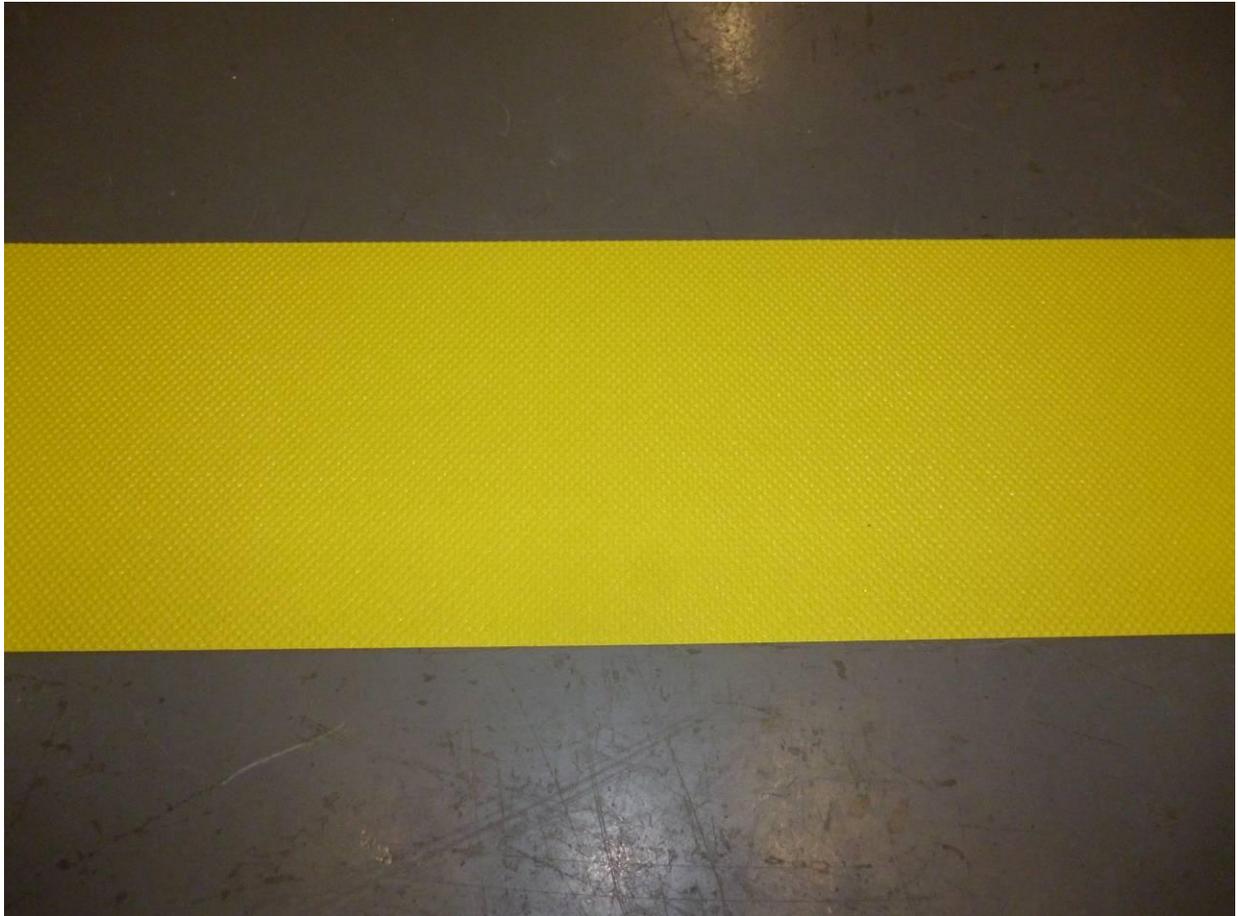


Figure 1: Stair nosing insert – PVC type ridged pyramid finish.

**ATTAR TEST REPORT NUMBER: 14/7886.4**

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23rd May 2014**Total Pages: 2****OIL-WET INCLINING PLATFORM SLIP RESISTANCE**

Job No: M14/7886

Prepared for:	Tredsafe PO Box 832242 GLENDENE AUCKLAND 0652 NEW ZEALAND	
Attention:	Lars Jacobsen	
Test Site:	ATTAR, Unit 1, 64 Bridge Road, Keysborough.	
Test Date:	21 st May 2014	
Manufacturer:	Unknown	
Test Specimen, Size & Quantity:	Stair nosing insert – PVC type ridged pyramid finish, 500x1000 mm, 8 off supplied.	
Sampling & Direction of Testing:	Sampling conducted by client. Test direction not applicable. Refer to Figure 1.	
Test Personnel:	Marcus Braché & Daniel King	
Preparation:	Washed with water and pH neutral detergent, rinsed with water, then dried.	
Joint Width:	N/A	
Air Temperature:	23°C	
Test Standard:	AS 4586 - 2013 Slip resistance classification of new pedestrian surface materials – Appendix D.	
Surface Structure :	Profiled.	
Test Shoes:	Lupos Picasso	
Classification Criteria: (TABLE 5 in AS 4586 - 2013)	Classification	Angle, degrees
	No Classification	<6
	R9	≥6<10
	R10	≥10<19
	R11	≥19<27
	R12	≥27<35
	R13	≥35
Displacement Space:	Not Measured	
Displacement Space Assessment Group:	N/A	
Corrected Mean Overall Acceptance Angle (rounded down to the nearest degree):	21°	
Classification:	R11	

These results apply only to the specimens tested and it is recommended that before selection of flooring or paving materials the effect of service conditions, including maintenance procedures and wear on their slip-resistance be checked.

NOTE: Any specimens supplied will be disposed of in two (2) months time, unless otherwise instructed.

ATTAR


Douglas Lehne
Floor Slip Tester
Approved Signatory

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ATTAR TEST REPORT NUMBER: 14/7886.4

23rd May 2014

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Figure 1: Stair nosing insert – PVC type ridged pyramid finish.

APPENDIX 1

**CLASSIFICATION CRITERIA – AS 4586 - 2013****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.

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 CLASSIFICATIONS 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	$\geq 6 < 10$
R10	$\geq 10 < 19$
R11	$\geq 19 < 27$
R12	$\geq 27 < 35$
R13	≥ 35

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.