



Industrial Research Services

Manufacturing & Materials Technology, Graham Road (PO Box 56), Highett, Victoria, Australia 3190
Telephone: 61 3 9252 6000 Facsimile: 61 3 9252 6244 Email: tiles@csiro.au Web: <http://www.cmmt.csiro.au>

Registered Testing Authority - Building Code of Australia

10 November 2006

Our Ref. EN13 / 1465 03/2012

TEST REPORT No. 3705-2s

Requested by: Abra Metals
on (date): 1 November 2006
Manufacturer: Abra Metals
Product Desc.: Abrasafe Knurled grating, 13mm load bar
Aluminium metal grating 1000mm x 500mm

Sampling details:
Where: Delivered
Date: 1 November 2006
By whom: Courier
How (methods): N/A

The results reported relate only to the sample(s) tested and the information received. No responsibility is taken for the accuracy of the sampling unless it is done under our own supervision. CSIRO cannot accept responsibility for deviations in the manufactured quality and performance of the product. While CSIRO takes care in preparing the reports it provides to clients, it does not warrant that the information in this particular report will be free of errors or omissions or that it will be suitable for the client's purposes. CSIRO will not be responsible for the results of any actions taken by the client or any other person on the basis of the information contained in the report or any opinions expressed in it. The reproduction of this test report is only authorised in the form of a complete photographic facsimile. Our written approval is necessary for any partial reproduction.

This test report consists of 4 pages

SUMMARY OF SLIP RESISTANCE TESTS PERFORMED:

		Result	Class
AS/NZS 4586:2004	Slip resistance classification of new pedestrian surface materials Appendix A: WET Pendulum (Four S slider):		
	Mean BPN:	54	W
AS/NZS 4586:2004	Slip resistance classification of new pedestrian surface materials, Appendix D: OIL-WET Ramp		
	Mean overall acceptance angle:	36.3°	R 13

In order to interpret the classifications, please refer to Standards Australia Handbook 197, An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials, which recommends minimum classifications for a wide variety of locations.

It is important to realise that test results obtained on unused factory-fresh samples may not be directly applicable in service, where proprietary surface coatings, contamination, wear and subsequent cleaning all influence the behaviour of the pedestrian surface.



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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET PENDULUM TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix A)

Test Date: 9 November 2006

RESULTS: Location: Slip Resistance Laboratory
Sample: Unfixed
Cleaning: Deionized water
Temperature: 23°C
Rubber slider used: Four S
Conditioned with grade P400 paper, dry

Pendulum Friction Tester: Stanley (S/N: 9234, calibrated 13/6/05)
Test conducted by: Peter Westgate

	Specimen				
	1	2	3	4	5
Last 3 swings	56	56	54	49	54
	56	56	55	49	54
	56	55	55	50	54
Averages	56	56	55	49	54

Mean BPN : 54

CLASS :

W

Where products are to be used in wet barefoot areas, it is more appropriate to test to Appendix C of AS/NZS 4586 (which is technically equivalent to DIN 51097).

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-WET RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix D)

Test Date: 9 November 2006

Location: Slip Resistance Laboratory

Sample Unfixed

Joint width: N/A mm

Surface structure: Smooth
 Profiled
 Structured

RESULTS

Mean overall acceptance angle: 36.3 °

Displacement space: not tested

CLASSIFICATION:

Slip Resistance Assessment Group:

R 13

Displacement Space Assessment Group:

-



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Date and Place 10 November 2006, Highett, Vic

Name, Title and Digital Signature:

A circular digital signature stamp containing a handwritten signature in black ink over a light blue background with vertical lines. Below the circle is the word 'CSIRO' in a light blue, sans-serif font.

CSIRO

PETER WESTGATE
Senior Laboratory Technician

Tel: 61 3 92526108
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Email: Peter.Westgate@csiro.au

Consulting services are available if further detailed analysis of the test results are required.

PR:W101106-13:46:29



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10 November 2006

Our Ref. EN13 / 1465 03/2012

TEST REPORT No. 3705-1s

Requested by: Abra Metals
on (date): 1 November 2006
Manufacturer: Abra Metals
Product Desc.: Abrasafe, Non- Knurled grating, 22mm load bar
Aluminium metal grating 1000mm x 500mm

Sampling details:
Where: Delivered
Date: 1 November 2006
By whom: Courier
How (methods): N/A

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SUMMARY OF SLIP RESISTANCE TESTS PERFORMED:

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AS/NZS 4586:2004	Slip resistance classification of new pedestrian surface materials Appendix A: WET Pendulum (Four S slider):		
	Mean BPN:	47	W
AS/NZS 4586:2004	Slip resistance classification of new pedestrian surface materials, Appendix D: OIL-WET Ramp		
	Mean overall acceptance angle:	14.9°	R 10

In order to interpret the classifications, please refer to Standards Australia Handbook 197, An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials, which recommends minimum classifications for a wide variety of locations.

It is important to realise that test results obtained on unused factory-fresh samples may not be directly applicable in service, where proprietary surface coatings, contamination, wear and subsequent cleaning all influence the behaviour of the pedestrian surface.

REPORT NO: 3705-1s
 ISSUE DATE: 10 November 2006
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 PRODUCT DESC: Abrasafe, Non- Knurled grating, 22mm load bar
 Aluminium metal grating 1000mm x 500mm

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

WET PENDULUM TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
 AS/NZS 4586:2004 (Appendix A)

Test Date: 9 November 2006

RESULTS: Location: Slip Resistance Laboratory Rubber slider used: Four S
 Conditioned with grade P400 paper, dry
 Sample: Unfixed
 Cleaning: Deionized water
 Temperature: 23°C

Pendulum Friction Tester: Stanley (S/N: 9234, calibrated 13/6/05)
 Test conducted by: Peter Westgate

	Specimen				
	1	2	3	4	5
Last 3 swings	50	47	46	46	50
	49	46	46	47	51
	49	46	45	46	50
Averages	49	46	46	46	50

Mean BPN : 47

CLASS :

W

CSIRO

Where products are to be used in wet barefoot areas, it is more appropriate to test to Appendix C of AS/NZS 4586 (which is technically equivalent to DIN 51097).

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SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-WET RAMP TEST METHOD

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4586:2004 (Appendix D)

Test Date: 9 November 2006

Location: Slip Resistance Laboratory

Sample Unfixed

Joint width: N/A mm

Surface structure: Smooth
 Profiled
 Structured

RESULTS

Mean overall acceptance angle: 14.9 °

Displacement space: not tested

CLASSIFICATION:

Slip Resistance Assessment Group:

R 10

Displacement Space Assessment Group:

-



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Date and Place 10 November 2006, Highett, Vic

Name, Title and Digital Signature:

A digital signature of Peter Westgate, written in black ink, overlaid on a light blue circular background that contains a stylized map of Australia. Below the signature is the word 'CSIRO' in a light blue, sans-serif font.

CSIRO

PETER WESTGATE
Senior Laboratory Technician

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PR:W101106-13:43:44