Ecotech Mineral Series - Ratings				
Surface: Lappato				
CSIRO Australian Standard 4586:2004 R10				
Surface: Matt				
CSIRO Australian Standard 4586:2004	R11			
NATA Australian Standard 4586:2013				
Surface: Rock				
CSIRO Australian Standard 4586:2004	R11			

Colours available in:

- 300x300mm Lappato R10, Matt R11 P3, Grip R11 & Polished
- 300x600mm Lappato R10, Matt R11 P3, Grip R11 & Polished
- 600x600mm Lappato R10, Matt R11 P3, Grip R11 & Polished







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Registered Testing Authority - CSIRO

30 May 2014 Our Ref. EN13 / 2337 03/0212

TEST REPORT No. 7058.2s

Requested by: Metro Tiles Pty Ltd

192 Granite Street

Geebung QLD 4034

on (date): 26 May 2014

Manufacturer: Ecotech

Product Desc.: Mineral Series, Lapatto Finish, Chromium, 600x300mm

Sampling details:

Where: Delivered
Date: 26 May 2014
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: 31 Y [MEDIUM*]

AS/NZS 4586:2004 Slip resistance classification of new pedestrian surface materials,

one resistance diassincation of new pedestrian surface materials,

Appendix D: OIL-WET Ramp

Mean overall acceptance angle: 16.8° R 10 [HIGH*]

* = CSIRO classification

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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REPORT NO: 7058.2s Page 2 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Lapatto Finish, Chromium, 600x300mm

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: 29 May 2014

RESULTS: Location: Slip Resistance Laboratory Rubber slider used: Four S

Sample: Unfixed Cleaning: Acetone Temperature: 23℃

Conditioned with grade P400 paper, dry

Pendulum Friction Tester: Stanley (S/N: 9234, calibrated 17/04/2013)

Test conducted by: Andy Giang

	Specimer	1			
	1	2	3	4	5
Last 3 swings	36	31	32	31	30
-	35	30	31	30	29
	35	30	31	30	29
Averages	35	30	31	30	29

Mean BPN: 31

CLASS:

Y [MEDIUM*]

^{* =} CSIRO classification



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REPORT NO: 7058.2s Page 3 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Lapatto Finish, Chromium, 600x300mm

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-	WET RAMP TEST METHOD
TEST CARRIED OUT IN ACCORDANCE WIT AS/NZS 4586:2004 (Appendix D)	Test Date: 30 May 2014
Location: Slip Resistance Laboratory	
Sample Fixed	
Joint width: 0 mm	
Surface structure: [] Smoot [X] Profile [] Structu	d A
RESULTS	
Mean overall acceptance angle:	16.8 °

CLASSIFICATION:

Displacement space:

Slip Resistance Assessment Group:

R 10 [HIGH*]

not tested

Displacement Space Assessment Group: -

^{* =} CSIRO classification



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REPORT NO: 7058.2s Page 4 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

TILE DESC: Mineral Series, Lapatto Finish, Chromium, 600x300mm

Date and Place 30 May 2014, Highett, Vic

Name, Title and Digital Signature:



ANDY GIANG
Technical Officer

Tel: 61 3 92526000 Fax: 61 3 92526244

Email: Andy.Giang@csiro.au

*CSIRO recommended classification of Slip Resistance as determined from: AS/NZS 4586: 2004 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).

Wet Pendulum Class	BPN 4S Rubber	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
V	>54	54-57	58-61	>61
W	45-54	45-48	49-51	52-54
Χ	35-44	35-38	39-41	42-44
Υ	25-34	25-28	29-31	32-34
Z	<25	<18	18-21	22-25
Oil Wet Ramp Class	Angle (degrees)	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
R9	≥6 to <10	≥6 to 7.5	7.6 to 9	9.1 to 9.9
R10	≥10 to <19	≥10 to 12	12.1 to 15	15.1 to 18.9
R11	≥19 to <27	≥19 to 21	21.1 to 24	24.1 to 26.9
R12	≥27 to <35	≥27 to 29	29.1 to 32	32.1 to 34.9
R13	≥35	≥35 to 36	36.1 to 38	≥38.1

This table should not be read or relied upon without reference to the CSIRO/Standards Australia publication: AS/NZS 4586 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).

CSIRO has categorized the AS4586 classifications into sub-groups Low, Medium & High. The slip resistance test classification is still determined according to AS 4586 Australian Standard (Appendices A & D). The added information of Low, Medium and High allows professionals to make a better judgement of pedestrian floor requirements.



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Registered Testing Authority - CSIRO

30 May 2014 Our Ref. EN13 / 2337 03/0212

TEST REPORT No. 7058.1s

Requested by: Metro Tiles Pty Ltd

192 Granite Street

Geebung QLD 4034

on (date): 26 May 2014

Manufacturer: Ecotech

Product Desc.: Mineral Series, Matt Finish, Chromium, 300x300mm

Sampling details:

Where: Delivered
Date: 26 May 2014
By whom: Courier
How (methods): N/A

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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: 39 X [MEDIUM*]

AS/NZS 4586:2004 Slip resistance classification of new pedestrian surface materials,

Appendix D: OIL-WET Ramp

Mean overall acceptance angle: 19.0° R 11 [LOW*]

* = CSIRO classification

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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REPORT NO: 7058.1s Page 2 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Matt Finish, Chromium, 300x300mm

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: 29 May 2014

RESULTS: Location: Slip Resistance Laboratory Rubber slider used: Four S

Conditioned with grade P400 paper, dry Sample: Unfixed

Cleaning: Acetone
Temperature: 23°C

Pendulum Friction Tester: Stanley (S/N: 9234, calibrated 17/04/2013)

Test conducted by: Andy Giang

	Specimer)			
	1	2	3	4	5
Last 3 swings	40	37	42	43	36
	39	37	42	43	36
	39	37	42	43	36
Averages	39	37	42	43	36

Mean BPN: 39

CLASS: X [MEDIUM*]

^{* =} CSIRO classification



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REPORT NO: 7058.1s Page 3 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Matt Finish, Chromium, 300x300mm

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

OIL-WET RAMP TEST METHOD

	RIED OUT IN ACCORDANCE WITH 86:2004 (Appendix D)	Test Date: 30 May 2014
Location:	Slip Resistance Laboratory	
Sample Fixe	ed	
Joint width:	0 mm	

Surface structure: [] Smooth [X] Profiled

X] Profiled] Structured

RESULTS

Mean overall acceptance angle: 19.0 °

Displacement space: not tested

CLASSIFICATION:

Slip Resistance Assessment Group: R 11 [LOW*]

Displacement Space Assessment Group: -

* = CSIRO classification



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REPORT NO: 7058.1s Page 4 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

TILE DESC: Mineral Series, Matt Finish, Chromium, 300x300mm

Date and Place 30 May 2014, Highett, Vic

Name, Title and Digital Signature:



ANDY GIANG Technical Officer

Tel: 61 3 92526000 Fax: 61 3 92526244

Email: Andy.Giang@csiro.au

*CSIRO recommended classification of Slip Resistance as determined from: AS/NZS 4586: 2004 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).

Wet Pendulum Class	BPN 4S Rubber	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
V	>54	54-57	58-61	>61
W	45-54	45-48	49-51	52-54
Χ	35-44	35-38	39-41	42-44
Υ	25-34	25-28	29-31	32-34
Z	<25	<18	18-21	22-25
Oil Wet Ramp Class	Angle (degrees)	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
R9	≥6 to <10	≥6 to 7.5	7.6 to 9	9.1 to 9.9
R10	≥10 to <19	≥10 to 12	12.1 to 15	15.1 to 18.9
R11	≥19 to <27	≥19 to 21	21.1 to 24	24.1 to 26.9
R12	≥27 to <35	≥27 to 29	29.1 to 32	32.1 to 34.9
R13	≥35	≥35 to 36	36.1 to 38	≥38.1

This table should not be read or relied upon without reference to the CSIRO/Standards Australia publication: AS/NZS 4586 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).

CSIRO has categorized the AS4586 classifications into sub-groups Low, Medium & High. The slip resistance test classification is still determined according to AS 4586 Australian Standard (Appendices A & D). The added information of Low, Medium and High allows professionals to make a better judgement of pedestrian floor requirements.



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Registered Testing Authority - CSIRO

30 May 2014 Our Ref. EN13 / 2337 03/0212

TEST REPORT No. 7058.3s

Requested by: Metro Tiles Pty Ltd

192 Granite Street

Geebung

QLD 4034 on (date): 26 May 2014

Manufacturer: Ecotech

Product Desc.: Mineral Series, Rock Finish, Chromium, 600x300mm

Sampling details:

Where: Delivered
Date: 26 May 2014
By whom: Courier
How (methods): N/A

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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: 47 W [LOW*]

AS/NZS 4586:2004 Slip resistance classification of new pedestrian surface materials,

Appendix D: OIL-WET Ramp

Mean overall acceptance angle: 24.9° R 11 [HIGH*]

* = CSIRO classification

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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REPORT NO: 7058.3s Page 2 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Rock Finish, Chromium, 600x300mm

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: 29 May 2014

RESULTS: Location: Slip Resistance Laboratory Rubber slider used: Four S

Conditioned with grade P400 paper, dry Sample: Unfixed

Cleaning: Acetone Temperature: 23°C

Pendulum Friction Tester: Stanley (S/N: 9234, calibrated 17/04/2013)

Test conducted by: Andy Giang

	Specimen 1	2	3	4	5
Last 3 swings	48	50	49	45	48
	47 47	49 49	48 48	45 45	48 48
Averages	47	49	48	45	48

Mean BPN: 47

CLASS: W [LOW*]

^{* =} CSIRO classification



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REPORT NO: 7058.3s Page 3 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

PRODUCT DESC: Mineral Series, Rock Finish, Chromium, 600x300mm

SLIP RESISTANCE CLASSIFICATION OF NEW PEDESTRIAN SURFACE MATERIALS

	OIL-WET RAMP TE	EST METHOD	
TEST CARRIED OUT IN ACC AS/NZS 4586:2004 (Appendi		Test Date: 30 May 2014	
Location: Slip Resistance	e Laboratory		
Sample Fixed			
Joint width: 0 mm			
Surface structure:	[] Smooth [X] Profiled [] Structured		
RESULTS			
Mean overall acceptance	angle: 24.9 °		

CLASSIFICATION:

Displacement space:

Slip Resistance Assessment Group:

R 11 [HIGH*]

not tested

Displacement Space Assessment Group: -

^{* =} CSIRO classification



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REPORT NO: 7058.3s Page 4 of 4

ISSUE DATE: 30 May 2014 MANUFACTURER: Ecotech

TILE DESC: Mineral Series, Rock Finish, Chromium, 600x300mm

Date and Place 30 May 2014, Highett, Vic

Name, Title and Digital Signature:



ANDY GIANG Technical Officer

Tel: 61 3 92526000 Fax: 61 3 92526244

Email: Andy.Giang@csiro.au

*CSIRO recommended classification of Slip Resistance as determined from: AS/NZS 4586: 2004 Slip Resistance Classification of New Pedestrian Surface Materials (Appendices A & D).

Wet Pendulum Class	BPN 4S Rubber	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
V	>54	54-57	58-61	>61
W	45-54	45-48	49-51	52-54
X	35-44	35-38	39-41	42-44
Υ	25-34	25-28	29-31	32-34
Z	<25	<18	18-21	22-25
Oil Wet Ramp Class	Angle (degrees)	CSIRO Class LOW	CSIRO Class MEDIUM	CSIRO Class HIGH
R9	≥6 to <10	≥6 to 7.5	7.6 to 9	9.1 to 9.9
R10	≥10 to <19	≥10 to 12	12.1 to 15	15.1 to 18.9
R11	≥19 to <27	≥19 to 21	21.1 to 24	24.1 to 26.9
R12	≥27 to <35	≥27 to 29	29.1 to 32	32.1 to 34.9
R13	≥35	>35 to 36	36.1 to 38	≥38.1

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