

Surface Water Absorption and Effect of Shower Chemicals

Materials Performance

Author: Ziyang Lu, Money Arora

Project Number: XC4094

Date of issue: 17 November 2025

Status: Final

Client: DuluxGroup (Australia) Pty Ltd Trading as Dulux Acratex

Commercial-in-confidence

Abstract decorative shapes in dark teal and light blue at the bottom of the page, consisting of overlapping curved and horizontal forms.

Enquiries

Enquiries should be addressed to:

Executive Director CSIRO Private Bag 10 Clayton South, VIC 3169 Telephone +61 3 9545 2777	Author CSIRO Infrastructure Technologies Gate 6, 71 Normanby Road, Clayton South, VIC 3169 Telephone +61 3 9545 8774	Client DuluxGroup (Australia) Pty Ltd Trading as Dulux Acratex 1 Jeanes Street, Beverley, SA 5009 Telephone: 0408191072
---	--	---

Report Details

Document: Materials Performance	Surface Water Absorption and Effect of Shower Chemicals
File number: XC4094	
Client: DuluxGroup (Australia) Pty Ltd Trading as Dulux Acratex	

Report Status and Revision History

VERSION	STATUS	DATE	DISTRIBUTION	COMMENT
Revision A	Final	17 November 2025	CSIRO, DuluxGroup (Australia) Pty Ltd Trading as Dulux Acratex	

Prepared on behalf of CSIRO and Authorised signatory

AUTHOR	REVIEWED BY	AUTHORISED SIGNATORY
Ziyang Lu	Money Arora	Money Arora
Technical officer- Materials Performance	Team leader-Materials Performance	Team leader-Materials Performance
		

Copyright and disclaimer

© 2025 CSIRO To the extent permitted by law, all rights are reserved and no part of this publication covered by copyright may be reproduced or copied in any form or by any means except with the written permission of CSIRO.

This document is a report prepared for DuluxGroup (Australia) Pty Ltd Trading as Dulux Acratex and is subject to the terms and conditions in the agreement.

CSIRO advises that the information contained in this publication comprises general statements based on scientific research. The reader is advised and needs to be aware that such information may be incomplete or unable to be used in any specific situation. No reliance or actions must therefore be made on that information without seeking prior expert professional, scientific and technical advice. To the extent permitted by law, CSIRO (including its employees and consultants) excludes all liability to any person for any consequences, including but not limited to all losses, damages, costs, expenses and any other compensation, arising directly or indirectly from using this publication (in part or in whole) and any information or material contained in it.

Contents

1	Introduction	3
2	Specimen Description	3
3	Test Methods	4
3.1	Measurement of Surface water absorption.....	4
3.2	The effect of Shower chemicals	5
4	Results	5
4.1	Surface water absorption.....	5
4.2	Effect of shower chemicals	7
5	Conclusion.....	8
6	Limitations.....	8

1 Introduction

This report describes the testing of the coating for measurement of surface water absorption in accordance with AS ISO 13007.2-2013 Appendix A.4.2 and resistance to common chemicals used in shower in accordance with ASTM D1308-20 'Effect of Household Chemicals on Clear and Pigmented Coating Systems'.

CSIRO is not NATA accredited for these tests.

2 Specimen Description

5 types of the specimen were supplied by the client as below:

The specimen description as provided by the client:

Product trade name: Dulux Acrastone

Manufacturer details: Dulux Acratex

System: Decorative flooring/wall coatings systems that can go in wet areas.

Applied to ceramic tiles, concrete and other standard substrates.

System for Interior application.

Description of the products:

Type 1:

Product: AcraStone Base

Coating Type: Water based epoxy.

Spread rate: 1 m²/L

Number of coats: 2

Type of sample: Coated Panel.

Specimens received: 3 of 300x300 mm coated panels.

Type 2:

Product: AcraStone Finish Fine

Coating Type: Water based epoxy.

Spread rate: 6 m²/L

Number of coats: 2

AcraStone Finish Fine is the decorative finishing coat that goes over the 'Base' coat.

Type of sample: Coated Panel.

Specimens received: 3 of 300x300 mm coated panels.

Type 3:

Product: AcraStone Finish Medium

Coating Type: Water based epoxy.

Spread rate: 3 m²/L

Number of coats: 2

AcraStone Finish Medium is the decorative finishing coat that goes over the 'Base' coat.

Type of sample: Coated Panel.

Specimens received: 3 of 300x300 mm coated panels.

Type 4:

Product: AcraStone Sealer

Coating Type: Water based Polyurethan clear sealer that goes over decorative coatings system.

Spread rate: 12 m²/L

Number of coats: 2

Type of sample: Coated Panel.

Specimens received: 3 of 300x300 mm coated panels.

Type 5

Product: AcraStone Sealer

Coating Type: Water based Polyurethan clear sealer that goes over decorative coatings system.

Spread rate: 12 m²/L

Number of coats: 2

Type of sample: Coated Panel.

Specimens received: 3 of 300x300 mm coated panels.

The specimens were received on 17/10/2025.

CSIRO were not involved in specimen selection.

The specimens were allocated with CSIRO specimen numbers as shown in the Table 1 below:

Table 1: Description of specimens received.

Client ID	CSIRO Specimen number
1 - AcraStone Base	XC4094-01
2 - AcraStone Finish Fine	XC4094-02
3 - AcraStone Finish Medium	XC4094-03
4 - AcraStone Sealer	XC4094-04
5 - Full System	XC4094-05

3 Test Methods

3.1 Measurement of Surface water absorption

The measurement of surface water absorption on the surface of the Coatings was determined in accordance with AS ISO 13007.2-2013 Appendix A.4.2.

A graduated measuring tube was sealed with a silicone sealant to the surface of the coatings. The measuring tube was then filled with water and the level of the water measured at 60 min intervals over 4 hours.

The testing was undertaken by Z. Lu over the period of 23rd to 31st October 2025 and the results relate to the specimens as supplied.

The testing was conducted under routine conditions; 23 ± 2°C and 60 ± 15% RH.

3.2 The effect of Shower chemicals

The effect of chemicals used and in contact with shower recess walls was determined in accordance with ASTM D1308-20 'Effect of Household Chemicals on Clear and Pigmented Coating Systems'.

A range of chemicals commonly used in showers were placed on the surface of the coatings and left on the surface covered with a watch glass for a period of 24 hours. The chemicals were then spot cleaned, and the surface inspected for change in appearance, change in blistering and change in gloss.

The testing was undertaken by Z. Lu over the period of 5th to 6th November 2025 and the results relate to the specimens as supplied.

The testing was conducted under routine conditions; $23 \pm 2^{\circ}\text{C}$ and $60 \pm 15\% \text{ RH}$.

4 Results

4 products were tested for Surface water absorption as requested by the client.

4.1 Surface water absorption

Specimen ID	Time	Surface water absorption (ml)		
		Tube 1	Tube 2	Tube 3
XC4094-01	0 hours	0.0 ml	0.0 ml	0.0 ml
	1 hour	0.0 ml	0.0 ml	0.0 ml
	2 hours	0.0 ml	0.0 ml	0.0 ml
	3 hours	0.0 ml	0.0 ml	0.0 ml
	4 hours	0.0 ml	0.0 ml	0.0 ml

Table 2: Test results for XC4094-01 Surface water absorption.

Specimen ID	Time	Surface water absorption (ml)		
		Tube 1	Tube 2	Tube 3
XC4094-02	0 hours	0.0 ml	0.0 ml	0.0 ml
	1 hour	0.0 ml	0.0 ml	0.0 ml
	2 hours	0.0 ml	0.0 ml	0.0 ml
	3 hours	0.0 ml	0.0 ml	0.0 ml
	4 hours	0.0 ml	0.0 ml	0.0 ml

Table 3: Test results for XC4094-02 Surface water absorption.

Specimen ID	Time	Surface water absorption (ml)		
		Tube 1	Tube 2	Tube 3
XC4094-03	0 hours	0.0 ml	0.0 ml	0.0 ml
	1 hour	0.0 ml	0.0 ml	0.0 ml
	2 hours	0.0 ml	0.0 ml	0.0 ml
	3 hours	0.0 ml	0.0 ml	0.0 ml
	4 hours	0.0 ml	0.0 ml	0.0 ml

Table 4: Test results for XC4094-03 Surface water absorption.

Specimen ID	Time	Surface water absorption (ml)		
		Tube 1	Tube 2	Tube 3
XC4094-04	0 hours	0.0 ml	0.0 ml	0.0 ml
	1 hour	0.0 ml	0.0 ml	0.0 ml
	2 hours	0.0 ml	0.0 ml	0.0 ml
	3 hours	0.0 ml	0.0 ml	0.0 ml
	4 hours	0.0 ml	0.0 ml	0.0 ml

Table 5: Test results for XC4094-04 Surface water absorption.

4.2 Effect of shower chemicals

Only one product (XC4094-05) was tested for effect of shower chemicals as requested by the client.

Specimen ID	Chemical	Appearance	Blistering	Loss of Gloss
XC4094-05	Pine o' clean	No change	No change	No change
	Hair Conditioner	No change	No change	No change
	Shampoo	No change	No change	No change
	Jiff Cleaner	No change	No change	No change
	Exit Mould	No change	No change	No change
	Windex Shower Cleaner	No change	No change	No change
	Domestos bleach	No change	No change	No change

Table 6: Test results for XC4094-05 Effect of Shower Chemicals.

5 Conclusion

The testing of Dulux Acrastone Base, AcraStone Finish Fine, AcraStone Finish Medium, and AcraStone Sealer demonstrated 'No water absorption' in accordance with AS ISO 13007.2-2013 Appendix A.4.2.

AcraStone Sealer showed no adverse effects when exposed to common shower chemicals for 24 hours in accordance with ASTM D1308-20.

6 Limitations

The test results relate only to the specimen of the product in the form in which they were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and will therefore invalidate the test results. It is the responsibility of the supplier for the product to ensure that the product which is supplied is identical with the specimens which were tested.

FINAL PAGE OF THE REPORT

CONTACT US

t 1300 363 400
+61 3 9545 2222
e enquiristeam@csiro.au
w www.csiro.au

YOUR CSIRO

Australia is founding its future on science and innovation. Its national science agency, CSIRO, is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.

FOR FURTHER INFORMATION

CSIRO Infrastructure Technologies
Alex Webb
Group Leader
t +61 3 9545 2584
e alex.webb@csiro.au
w <https://research.csiro.au/infratech/>