



03 November 2023

Our Ref: EN13 / 1389 03/0211

TEST REPORT No. SW8500

Requested by: Parchem Construction Supplies Pty Ltd
1956 Dandenong Rd
Clayton
VIC 3168

On (date): 3rd November 2023
Product Descriptions: Fosroc Nitoproof 310

Manufacturer: Parchem Construction Supplies Pty Ltd

Sampling Details
Date: 30 August 2023
How (methods): Delivered to Clayton

Copyright and disclaimer

© 2023 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. CSIRO advises that the information contained in this publication comprises observations based on test results. 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.

The results reported herein relate only to the item(s) tested.

This test report consists of 15 pages.

SUMMARY OF ASSESSMENTS REPORTED

AS/NZS 4858:2004	Appendix A – Table A1	Pass
AS/NZS 4858:2004	Appendix B, Resistance of Waterproofing Membranes to Cyclic Movement	Pass
AS 3558.1-1999	Water Absorption	1.58%
ASTM E96:2016	Moisture Vapour Transmission	Pass

TERM OF VALIDITY

Fosroc Nitoproof 310 is deemed to meet the requirements of:
AS/NZS 4858: 2004 - Wet Area Membranes

This CSIRO wet area membrane report will lapse three years after the initial date of issue and assessment unless revalidation has been requested and granted.

The Report number SW8500 valid until 2nd November 2026



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

SUMMARY OF RESULTS

AS/NZS 4858:2004 Wet Area Membranes

Appendix A: Assessment of Durability of waterproof membranes

Report No.	7741.2	8347	SW8500	
Year of test	2016	2020	2023	
Control	545%	528%	501%	Class III
Water Immersion	412%			PASS
Bleach Immersion (28 days)	193%(CONDITIONAL PASS)		432%	PASS
Detergent Immersion	330%			PASS
Heat Ageing @ 50 °C	545%			PASS

Full Description: (Inc. All layers); Fibre enhanced single component water-based latex. Waterproofing membrane.

Parchem Construction Supplies Pty Ltd test sample, Fosroc Nitoproof 310 achieves the performance requirements of AS/NZS 4858: 2004 Durability of Membranes for Class III membrane installation.

Appendix B: Assessment of resistance of waterproofing membranes to cyclic movement

Class III type membrane: 2mm gauge length for a 4mm extension, repeated 50 cycles.

Requirement: No fatigue cracking exhibited.
Result: **PASS**

ASTM E96:2016 Water Vapour Transmission of Materials

0.56g/m²/24hr

Appendix C: Suitability of waterproofing membranes when used over particle board.

Appendix C will be required as the Fosroc Nitoproof 310 has a water vapour transmission below 8g/m²/24hr.

AS 3558.1:1999 Methods of testing plastics & composite materials sanitary plumbing fixtures:

Method 1: Determination of water absorption characteristics

Water absorption:	Sample 1	1.40%	
	Sample 2	1.50%	
	Sample 3	1.58%	Maximum 1.58%

Conclusion: Fosroc Nitoproof 310 does not require a 'Suitability over particleboard' to pass the requirements of AS/NZS 4858 Wet area membranes.



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 3 of 15

TEST CARRIED OUT IN ACCORDANCE WITH

Test Start Date: 11 September 2023

Test End Date: 18 September 2023

AS/NZS 4858:2004 Wet Area Membranes

Appendix A: Assessment of Durability of waterproof membranes

RESULTS: Location: 002N.1.03 Laboratory
Specimens: Prepared all specimens of type 5 in accordance with AS1145.3
Specimen Conditions: 7 days at 23±2°C & 65 ±15% RH
Test rate: 200mm/min.

CONTROL SAMPLES

Specimen No.:	Thickness (mm)	Maximum Load (N)	Maximum Elongation (mm)	Tensile Strength (MPa)	Maximum Strain (%)
SW8500/01	1.28	16.39	129.61	2.04	518.44
SW8500/02	1.20	13.57	124.08	1.89	496.31
SW8500/03	1.18	16.02	125.31	2.26	501.24
SW8500/04	1.15	14.27	122.58	2.07	490.32
SW8500/05	1.14	14.15	128.51	2.07	514.02
Mean	1.19				504

Requirement for Class III: The specimens have an average percentage strain of ≥300%

Classification: **504** Class III (High extensibility)



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 4 of 15

Test Date: 25 October 2023

RESULTS: Location: Ceramic Tile Laboratory
Conditions: 7 days at 23°C 55%RH
Sample Number: SW8500/6-9 (Numbered 1 to 9)
Samples: Average of 3 samples
Load rate: 200mm/min
Solution: 1L of 10.5 g/L sodium hypochlorite & 2.25 g/L of sodium hydroxide

Elongation at Break

BLEACH IMMERSION

Period & Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
28 Days SW8500/6-9	1.08	10.6	108	1.6	432

Requirement: The sample requires an elongation at break strain greater than 252% at 28 days without additional bond relief. Between 252% and 126% additional bond strength is required. Less than 126% - fail.

Result: 432% **PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 5 of 15

TEST CARRIED OUT IN ACCORDANCE WITH

Test Start Date: 07 September 2020

Test End Date: 14 September 2020

AS/NZS 4858:2004 Wet Area Membranes

Appendix A: Assessment of Durability of waterproof membranes

RESULTS: Location: 002N.1.03 Laboratory
Specimens: Prepared all specimens of type 5 in accordance with AS1145.3
Samples: Average of 5 samples
Specimen Conditions: 7 days at $23\pm 2^{\circ}\text{C}$ & $65 \pm 15\%$ RH
Test rate: 200mm/min.

CONTROL SAMPLES

Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
8347 1 to 5	1.23	13.61	131.91	1.85	528

Requirement for Class III: The specimens have an average percentage strain of $\geq 300\%$

Classification: **528** Class III (High extensibility)



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 6 of 15

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4858:2004 Wet Area Membranes
Appendix A: Assessment of Durability of waterproof membranes

Test Date: 19 August 2016

RESULTS: Location: Ceramic Tile Laboratory
Conditions: 7 days at 23°C 55%RH
Sample Number: 7741.2 - 1 (Numbered 1 to 5)
Samples: Average of 5 samples
Load rate: 200mm/min

Elongation at Break

CONTROL SET

Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
7741.2 - 1 1 to 5	1.18	15.94	179.81	2.25	545

Requirement for Class III: The specimens have an average percentage strain of $\geq 300\%$

Classification: **545** Class III (High extensibility)



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 7 of 15

TEST CARRIED OUT IN ACCORDANCE WITH AS/NZS 4858:2004 Wet Area Membranes
Appendix A: Assessment of Durability of waterproof membranes

Test Date: 29 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Conditions: 7 days at 23°C 55%RH
Sample Number: 7741.2 - 3 (Numbered 1 to 9)
Samples: Average of 3 samples
Load rate: 200mm/min
Solution: 1L of deionised water

Elongation at Break

WATER IMMERSION

Period & Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
7 Days 7741.2 – 3 1 to 3	1.02	8.40	171.22	1.37	519
28 Days 7741.2 – 3 4 to 6	1.05	7.70	149.15	1.22	443
56 Days 7741.2 – 3 7 to 9	1.05	7.57	136.10	1.20	412

Requirement: The sample requires an elongation at break strain greater than 273% at 56 days without additional bond relief. Between 273% and 137% additional bond strength is required. Less than 137% - fail.

Result: **412%** **PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

TEST CARRIED OUT IN ACCORDANCE WITH AS/NZS 4858:2004 Wet Area Membranes
Appendix A: Assessment of Durability of waterproof membranes

Test Date: 29 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Conditions: 7 days at 23°C 55%RH
Sample Number: 7741.2 - 5 (Numbered 1 to 9)
Samples: Average of 3 samples
Load rate: 200mm/min
Solution: 1L of 10.5 g/L sodium hypochlorite & 2.25 g/L of sodium hydroxide

Elongation at Break

BLEACH IMMERSION

Period & Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
7 Days 7741.2 – 5 1 to 3	1.09	4.35	102.42	0.66	310
28 Days 7741.2– 5 4 to 6	1.10	4.17	73.37	0.63	222
56 Days 7741.2 – 5 7 to 9	1.11	3.18	63.69	0.57	193

Requirement: The sample requires an elongation at break strain greater than 273% at 56 days without additional bond relief. Between 273% and 137% additional bond strength is required. Less than 137% - fail.

Result: **193%** **CONDITIONAL PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 9 of 15

TEST CARRIED OUT IN ACCORDANCE WITH AS/NZS 4858:2004 Wet Area Membranes
Appendix A: Assessment of Durability of waterproof membranes

Test Date: 29 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Conditions: 7 days at 23°C 55%RH
Sample Number: 7741.2 - 4 (Numbered 1 to 9)
Samples: Average of 3 samples
Load rate: 200mm/min
Solution: 1L of 2% solution N8 detergent

Elongation at Break

DETERGENT IMMERSION

Period & Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
7 Days 7741.2 – 4 1 to 3	1.13	8.26	153.16	1.22	464
28 Days 7741.2 – 4 4 to 6	1.15	6.88	126.38	1.00	383
56 Days 7741.2 – 4 7 to 9	1.16	5.75	108.78	0.83	330

Requirement: The sample requires an elongation at break strain greater than 273% at 56 days without additional bond relief. Between 273% and 137% additional bond strength is required. Less than 137% - fail.

Result: **330%** **PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 10 of 15

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4858:2004 Wet Area Membranes
Appendix A: Assessment of Durability of waterproof membranes

Test Date: 19 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Conditioning: 23°C 55%RH
Sample Number: 7741.2 - 2 (Numbered 1 to 4)
Samples: Average of 4 samples
Load rate: 200mm/min

Elongation at Break

HEAT AGEING @ 50 °C

Sample Number	Sample Thickness Mean (mm)	Maximum Load (N)	Maximum Extension (mm)	Maximum Stress MPa	Maximum Strain %
7741.2- 2 1 to 4	1.21	18.95	179.96	2.61	545

Requirement: The sample requires an elongation at break strain greater than 273% at 7 days. Less than 273% - fail.

Result: **545%** **PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 11 of 15

TEST CARRIED OUT IN ACCORDANCE WITH
AS/NZS 4858:2004 Wet Area Membranes
Appendix B: Assessment of Resistance of
Waterproofing Membranes to Cyclic Movement

Test Date: 07 October 2016

RESULTS: Location: Ceramic Tile Laboratory
Test Rig: Applied Test Systems
Series 904 Vertical Sealant Tester
Number of Cycles: 50
Type of Cycle: Full cycle
Cycle Time: 2 hours to complete full cycle.
Cycle expansion: 50% of Control elongation at break
Sample Size: 65mm x 25mm
Sample Span: 4mm between header plates
Sample Thickness: 1.16mm

The test sample achieved a control Elongation of Break of 545% as per AS4858 Appendix A. For a Class III membrane type the extension movement used for cycling is 4mm extension.

Number of Cycles completed 50
Surface Cracking Nil
Surface Tears Nil
Membrane Rupture Nil

Result: PASS



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 12 of 15

TEST CARRIED OUT IN ACCORDANCE WITH
ASTM E96:2016 Water Vapour Transmission of Materials

Test Date: 02 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Open mouth dish: Diameter 100mm
Test Period: 456 hours
Conditions: 23°C / RH 50%
Membrane to dish sealant: wax
Desiccant: Silica gel

Desiccant Method (Procedure A)

Sample	Thickness mm	Water Vapour Tx g/m ² /24hr	Permeance µg/N.s
Specimen 1	1.18	0.60	0.000601
Specimen 2	1.19	0.56	0.000561
Specimen 3	1.22	0.51	0.000507
Mean	1.20	0.56	0.000557

Requirement: If > 8g/m²/24 hours, additional testing referred to in (e) of Table A1 will be required to establish suitability for use over particleboard.

Result:

Permeance 0.0006µg/N.s

Water vapour transmission 0.56g/m²/24 hours **PASS**



REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 13 of 15

TEST CARRIED OUT IN ACCORDANCE WITH
AS 3558.1-1999: Water Absorption

Test Date: 13 September 2016

RESULTS: Location: Ceramic Tile Laboratory
Test Period: 24 hours
Conditions: 23°C / RH 50%

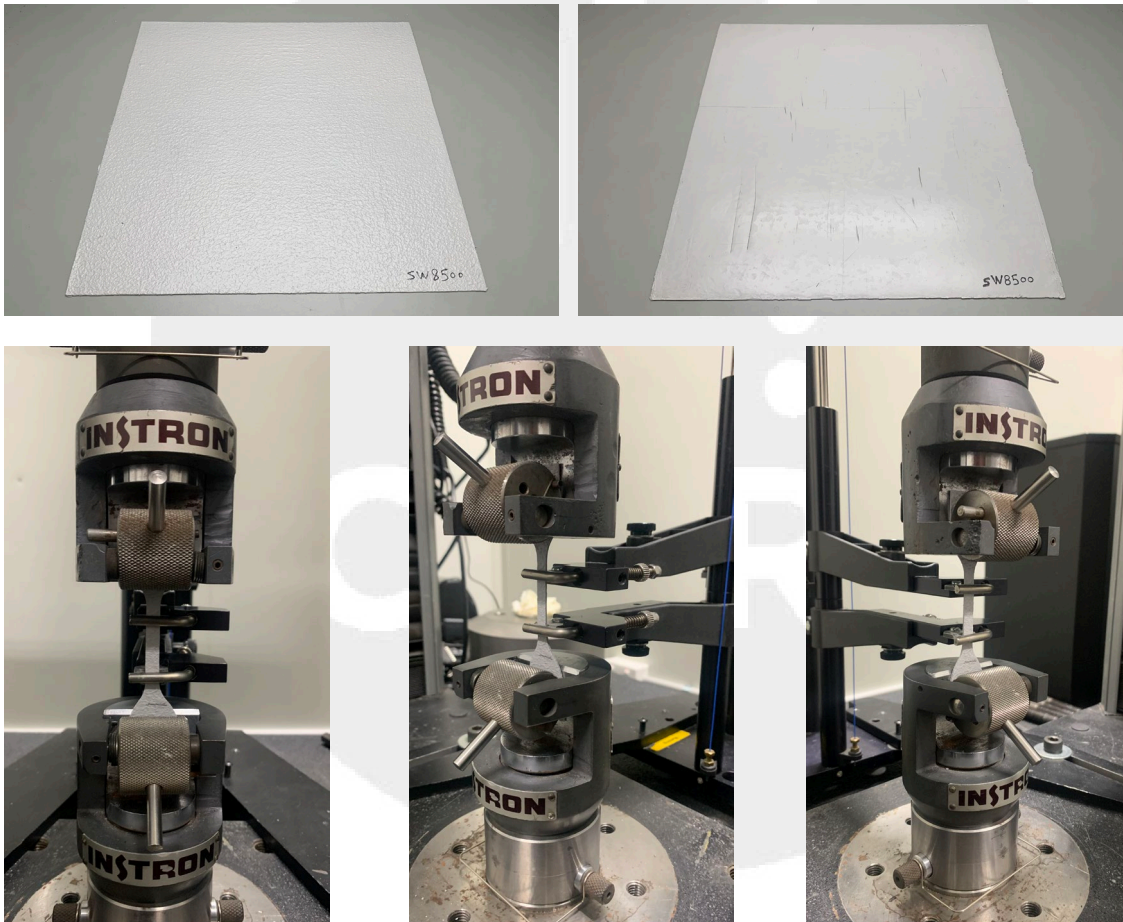
Sample	Thickness (mm)	Water Absorption		
		Mass (m1)	Mass (m2)	% Mass Difference
Specimen 1	1.19	14.30	14.50	1.40
Specimen 2	1.18	13.97	14.18	1.50
Specimen 3	1.23	14.57	14.80	1.58
Mean	1.20	14.28	14.90	1.49

Requirement: Determine maximum water absorption as mean difference %

Result: **1.58%**

REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 14 of 15



Specimens' photos



Infrastructure Technologies

Gate 5, 2 Normanby Road Clayton VIC 3168, Australia
Telephone: 61 3 9545 2777 Web: <http://www.csiro.au>

REPORT NO: SW8500
ISSUE DATE: 03 November 2023
MANUFACTURER: Parchem Construction Supplies Pty Ltd
PRODUCT DESC: Fosroc Nitoproof 310

Page 15 of 15

Prepared on behalf of CSIRO by:

	Author	Reviewer
Name	Ahmed Menisi	Ms Money Arora
Position	Technical Officer- Materials Performance	Acting team leader- Materials Performance
Date	3 November 2023	3 November 2023



CSIRO Science Connect
Infrastructure Technologies
Materials Performance
Gate 5, 2 Normanby Road
CLAYTON, VIC
AUSTRALIA 3168
Ph.: +61 (0)3 9545 8774
Web: <https://www.csiro.au/>
Fax: +61 (0)3 9544 1128