



TEST REPORT

DC11800-040

REPORT ON TESTING OF FOSROC NITOPROOF 810 MEMBRANE TO THE REQUIREMENTS OF AS/NZS4858:2004

CLIENT

Parchem Construction Supplies
7 Lucca Rd,
Wyong, NSW 2259
Australia



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INTERIM TEST SUMMARY

Objective

Testing was completed of 0.75 mm Fosroc Nitoproof 810 membrane to the requirements of AS/NZS4858:2004 *Wet Area Membranes*.

Summary

Passing results were obtained for the 0.75 mm Fosroc Nitoproof 810 membrane where requirements are stated in the AS/NZS 4858:2004 Standard. The 0.75 mm Fosroc Nitoproof 810 membrane sample material submitted met the requirements to be classified as Class III (high extensibility).

Test sponsor

Parchem Construction Supplies
7 Lucca Rd,
Wyong, NSW 2259
Australia

Description of test specimen

The client supplied sheet membrane samples to be tested.

LIMITATION

The results reported here relate only to the item/s tested.

TERMS AND CONDITIONS

This report is issued in accordance with the Terms and Conditions as detailed and agreed in the BRANZ Services Agreement for this work.



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1. SCOPE

The client requested testing of the Fosroc Nitoproof 810 waterproofing membrane to the performance specifications of AS/NZS 4858:2004 Table A1, parts (a) – (e), water absorption to AS 3558.1 and cyclic movement resistance to AS/NZS 4858 Appendix B.

2. DESCRIPTION OF MATERIAL TESTED

The Fosroc Nitoproof 810 waterproofing membrane is an elastomeric, fibre reinforced, waterproofing membrane for use under ceramic and stone tile finishes. The samples sent for testing were assigned the BRANZ sample code 20/050.

3. DESCRIPTION OF TEST PROCEDURE

3.1 Durability Testing AS/NZS 4858:2004 Appendix A.

Test specimens were prepared in accordance with AS 1145.3 (type 5 specimen) and were conditioned for 7 days at $23 \pm 2^\circ\text{C}$ and $65 \pm 15\%$ relative humidity prior to being control tested, and exposed to deionised water, bleach and detergent for a period of 7, 28 and up to 68 days, respectively. The planned 56 day immersion tests were extended by the New Zealand Government's response to COVID-19. The specimens were then wiped dry and tested for tensile strength and elongation at break. Heat ageing to the requirements of AS 4654.1 was also conducted as that Standard states the heat ageing testing it requires is deemed to meet the requirements of AS/NZS 4858. This involved conditioning the test specimens (AS 1145.3 type 2 specimens) in an oven set at $80 \pm 2^\circ\text{C}$ for a period of 14 days followed by 2 days at $23 \pm 2^\circ\text{C}$ and $65 \pm 15\%$ relative humidity before being tested for strength and elongation at break. An Instron 5569 Universal testing machine with a 10 kN load cell was used to provide a constant rate of elongation, a set gauge length of 80 mm was used. Test results are recorded in Tables 1 - 5 and are summarised in Table 7.

3.2 Water absorption AS 3558.1

Three test specimens of area $5000 \pm 300 \text{ mm}^2$ were conditioned in an oven at a uniform temperature of $50 \pm 5^\circ\text{C}$ for 24 hours prior to being weighed (m1). Three clear tubes with an internal dimension of 53 mm were then adhered to each test specimen with Fosroc 'Seelastrip'. Tap water was then poured into each tube over the sample surface to a height of 50 mm. After 24 ± 0.25 hours the water was drained and the test assembly removed. Excess water was wiped from all surfaces prior to being weighed (m2). The mass difference of each specimen, as a percentage of the original mass was then calculated. The results are reported in Table 6.

3.3 Resistance to Cyclic Movement AS/NZS 4858:2004 Appendix B

Samples of approximate dimensions 65 mm x 25 mm were subjected to 50 cycles whereby a gauge length of 2mm was extended at a constant strain rate to 50% of the control elongation at break.

Observations were made when fully extended to examine for crazing, surface tears or membrane rupture. The result is reported in Table 7.



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3.4 Moisture Vapour Transmission Rate ASTM E96 Desiccant Method

Two samples were tested following the desiccant method of ASTM E96. The result is reported in Table 7.

4. INTERIM TEST RESULTS

Table 1: Control results

Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)	Class
0.75	24.12	5.43	408	III (high extensibility)

Table 2: Aged test results - water

Aged period	Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)
7 days	0.87	9.46	1.84	787
28 days	0.84	13.82	2.76	695
≥56 days	0.78	16.62	3.63	598

Table 3: Aged test results – bleach

Aged period	Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)
7 days	0.83	9.67	1.97	730
28 days	0.99	16.81	2.88	738
56 days	0.99	11.66	1.98	624

Table 4: Aged test results - detergent

Aged period	Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)
7 days	0.81	9.47	1.98	807
28 days	0.79	12.43	2.55	806
≥56 days	0.63	3.31	0.87	352

Table 5: Aged test results to AS 4654.1 using AS 1145.3 type 2 specimens

Control AS 1145.3 type 2 specimens

Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)
1.12	80.62	3.13	273

Heat aged AS 1145.3 type 2 specimens

Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)
0.85	90.29	4.28	265



Table 6: Water absorption

Sample	% water absorption
1	2.96
2	5.14
3	11.76

Table 7: AS/NZS 4858 Table 8.1 Test result summary for Fosroc Nitoproof 810 membrane

Test	Specifics	Result
(a) Moisture Vapour Transmission Rate	ASTM E96 Desiccant method	3.21 g/m²/24h
(b) Water absorption (mean)	AS 3558.1	6.62%
(c) Resistance to Cyclic Movement	No fatigue cracking exhibited	Pass
(d) Durability	Average retention of elongation at break compared to control samples	
7 days	193%	Pass
28 days Deionised water at 23±2°C	170%	Pass
≥56 days	147%	Pass
7 days	179%	Pass
28 days Bleach at 23±2°C	181%	Pass
56 days	153%	Pass
7 days	198%	Pass
28 days Detergent at 23±2°C	198%	Pass
≥56 days	86%	Pass
14 days heat ageing at 80±2°C & 2 days at 23±2°C and 65±15% RH	97%	Pass