



TEST REPORT

DC13305-011

REPORT ON TESTING OF ARDEX WPM 750 MEMBRANE TO THE REQUIREMENTS OF AS/NZS4858:2004

CLIENT

Ardex Australia Pty Ltd
20 Powers Road
Seven Hills
NSW 2147
AUSTRALIA



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TEST SUMMARY

Objective

Testing was completed to the requirements of AS/NZS4858:2004 *Wet Area Membranes*.

Summary

Passing results were obtained for the 0.87 mm thick WPM 750 membrane where requirements are stated in the AS/NZS4858:2004 Standard. The WPM 750 membrane samples supplied met the requirements to be classified as Class III (High Extensibility).

Test sponsor

Ardex Australia Pty Ltd
20 Powers Road
Seven Hills
NSW 2147
AUSTRALIA

Description of test specimen

The client supplied sheet membrane samples to be tested. The samples were assigned the BRANZ Sample Reference 21/048.

Date of test

Testing completed on 1 April 2021.

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 WPM 750 waterproofing membrane to the performance specifications of AS/NZS4858:2004 *Wet area membranes*. Samples were prepared under specified conditions and testing was completed to AS/NZS4858:2004 *Wet area membranes* and references the following standards: cyclic movement (CSIRO Moving Joint Test), water absorption (AS3558.1) and water vapour transmission (ASTM E96). Tensile testing was completed on an Instron 5569 Universal testing machine with a 10 kN load cell was used to provide a constant rate of elongation.

2. SUMMARY

Table 1: Test result summary for WPM 750 membrane based on AS/NZS4858:2004 specifications.

TEST	SPECIFICS	RESULTS
(a) Moisture Vapour Transmission Rate	ASTM E96 Desiccant method	0.21 g/m ² /d
(b) Water absorption (maximum)	AS3558.1	1.88%
(c) Resistance to Cyclic Movement	No fatigue cracking exhibited	Pass
Thickness ¹	Various methods	N/A
(d) Durability ²	Average retention of elongation at break compared to control samples	
7 days	104%	Pass
28 days Deionised water at 23±2°C	106%	Pass
56 days	101%	Pass
7 days	108%	Pass
28 days Bleach at 23±2°C	103%	Pass
56 days	102%	Pass
7 days	107%	Pass
28 days Detergent at 23±2°C	106%	Pass
56 days	104%	Pass
7 days heat ageing at 50±2°C & 2 days at 23±2°C and 65±15% RH	87%	Pass

Notes:

1. Thickness measurement – the product is a liquid applied waterproofing membrane. The thickness of the membrane will be determined by application.
2. Durability of membranes is a combined group of assessments as detailed in AS/NZS4858:2004 Appendix A, Table A1.



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3. MOISTURE VAPOUR TRANSMISSION RATE

3.1 Testing

Two samples were tested following the desiccant method of ASTM E96.

3.2 Results

Results are an average of 2 samples.

Table 2: Moisture Vapour Transmission Results

Thickness (mm)	WVTR (g/m ² /24 hours)	Minimum result (g/m ² /24 hours)	Maximum result (g/m ² /24 hours)
0.87	0.21	0.20	0.22

4. WATER ABSORPTION

4.1 Testing

Test carried out in accordance with AS3558.1, with a modified sample size of 50 mm x 50 mm by the thickness used in practice.

4.2 Results

Table 3: Water absorption

Sample	% water absorption
1	1.88
2	1.25
3	1.87

5. CYCLIC MOVEMENT

5.1 Resistance to Cyclic Movement AS/NZS4858:2004 Appendix B

Samples of approximate dimensions 65 mm x 25 mm were subjected to 50 cycles whereby a gauge length of 2 mm was extended at a constant strain rate to 4 mm extension.

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

5.2 Testing

Testing carried out in accordance with AS/NZS4858:2004 Appendix B Assessment of resistance of waterproofing membranes to cyclic movement.



Sample	WPM 750
Sample code	21/047
Material class	III
Test time	2 hours
Cyclic extension	4 mm
Rate of extension	3.34 mm/min

5.3 Results

The test sample achieved a control elongation at break of 832% as per AS/NZS4858:2004 Appendix A. For a Class III membrane the extension movement used for cycling is 4 mm.

Number of cycles completed:	50
Surface crazing:	Nil
Surface tears:	Nil
Membrane Rupture:	Nil
Results:	Pass

6. DURABILITY

6.1 Durability Testing

Test specimens were prepared in accordance with AS1145.3 (type 5 specimen) and were conditioned for 7 days at 23±2°C and 65±15% relative humidity prior to being tested. Testing was then carried out in accordance with AS/NZS4858:2004 Appendix A.

6.2 Results

Table 4: Control results

Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (%)	Class
0.87	21.16	4.06	832.3	III (high extensibility)

Table 5: Immersion ageing results

Solution	Aged period	Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (% of control)
De-ionised water	7 days	0.86	27.95	5.42	104
	28 days	0.88	26.90	5.13	106
	56 days	0.88	26.65	5.07	101
Bleach	7 days	0.87	28.18	5.42	108
	28 days	0.90	23.85	4.44	103
	56 days	0.91	22.50	4.15	102
Detergent	7 days	0.88	26.21	4.96	107
	28 days	0.88	23.74	4.48	106
	56 days	0.88	23.56	4.48	104



Table 6: Heat ageing results

Ageing Conditions	Aged period	Thickness (mm)	Max Load (N)	Max Stress (MPa)	Elongation at break (% of control)
50°C	7 days	0.80	25.1	5.08	87



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