



TEST REPORT

DC20899-02-1

REPORT ON MATERIALS TESTING OF FOSROC SA80 TAPE TO AS 4654.1-2012.

CLIENT

Parchem Construction Supplies Pty Ltd,
7 Lucca Road,
Wyong,
NSW, 2259
Australia



All tests and procedures reported herein, unless indicated, have been performed in accordance with the laboratory's scope of accreditation



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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.

SCOPE OF LABORATORY ACCREDITATION

This section will contain details on the approach report signatories have taken to clearly present 'out of scope' test and procedure information within this report – if any.



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1. SCOPE

Testing of supplied waterproofing membrane to the requirements of **AS 4654.1-2012 Waterproofing membranes for external above-ground use Part 1: Materials.**

Test schedule as determined by AS 4654.1-2012	
Membrane property requirement	Test method
Bond strength	ASTM C794
Cyclic movement	AS 4654.1-20012 Appendix B, CSIRO moving joint test.
Durability	AS 4654.1-2012 Appendix A Classification and properties
Water vapour transmission rate	ASTM E96

2. PRODUCT

Product name: Fosroc SA80 Jointing Tape

Product type: Reinforcing tape to be used with liquid membrane.

The test specimens were received on 11/08/2025 and assigned the following BRANZ sample designations, 25/368.

Images of the supplied test materials are given in Figure 1.

The client supplied 2 rolls of the SA80 Jointing Tape.

The method of sample preparation and sampling was unknown.



Figure 1: As received test materials.

3. SUMMARY

The membrane tested met the requirements of AS 4654.1:2012. The product classification and results summary are given below in Table 1 and 2.

Table 1: Membrane Classification

Membrane Classification (Fully Bonded)			
Class	Elongation at break (AS 1145)	Reinforcement included as part of the system	Exposure designation
II - Medium extensibility	60 - 299%	Yes*	Non-Exposed

*This product provides reinforcing for a liquid membrane system.

Table 2: AS4654.1 results summary.

TEST	Test result		Conformance
Bond strength (peel strength on plywood)	6.3 N		Recorded value
Bond strength (peel strength on concrete)	7.2 N		Recorded Value
Moisture Vapour Transmission Rate	0.22 g/m ² /day		Recorded value
Resistance to Cyclic Movement	Class II		PASS
Thickness	0.80 mm		Recorded value
Tensile strength	2.9 MPa		Recorded value
Durability			
Control (% elongation)	Control	72.4	Recorded value
Deionised water (% elongation)	7 days	77.6	PASS
	28 days	72.7	
	56 days	72.3	
Detergent (% elongation)	7 days	64.7	PASS
	28 days	71.2	
	56 days	66.7	
Heat Ageing (% elongation)	14 days at 80°C	55.5	PASS
Temperature resistance (% elongation)	-15°C - 85°C	57.7	Recorded value

Note: The manufacturing guidelines for bioresistance are to be followed.
All testing was completed between 13/08/2025 and 19/12/2025.



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4. RESULTS

4.1 Bond strength

Testing was carried out in accordance with ASTM C794. Test results are given in Table 3 and Table 4.

Test deviations.

No deviations were recorded.

Test conditions

Primer	No primer used
Adhesive/Membrane	Fosroc SA80 Self Adhesive Tape
Test condition	Dry
Mesh size	No mesh used
Substrate	Ply H3.2 and Concrete
Surface preparation	Wiped Clean

Table 3: Bond strength results on plywood.

Sample number	Peak load (N)	Peel strength (N)	Failure mechanism
1	6.5	6.0	Cohesive failure of adhesive
2	6.6	6.0	Cohesive failure of adhesive
3	7.5	7.1	Cohesive failure of adhesive
4	6.7	6.1	Cohesive failure of adhesive
Average	6.8	6.3	

The average peak load of the four samples was 6.8 N.

The average peel strength of the four samples was 6.3 N.

Table 4: Bond strength results on concrete.

Sample number	Peak load (N)	Peel strength (N)	Failure mechanism
1	7.9	7.4	Cohesive failure of adhesive
2	7.8	7.0	Cohesive failure of adhesive
3	8.0	7.2	Cohesive failure of adhesive
4	8.5	7.4	Cohesive failure of adhesive
Average	8.0	7.2	

The average peak load of the four samples was 8.0 N.

The average peel strength of the four samples was 7.2 N.



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4.2 Moisture vapour transmission rate

Testing was carried out in accordance with ASTM E96 desiccant method. Test results are given in Table 5.

Test deviations.

No deviations were recorded.

Test conditions

Average temperature (°C)	23.3
Average humidity (%RH)	49
Product type	Heterogeneous
Cup type	Dry
Sealant	Paraffin

Table 5: Moisture Vapour Transmission Results

Sample	Thickness, mm	WVTR (g/m ² d)
A	0.80	0.26
B	0.81	0.19
C	0.80	0.21
Average	0.80	0.22

The average vapour flow (WVTR) of the three samples is 0.22 g/m²/24 hours.

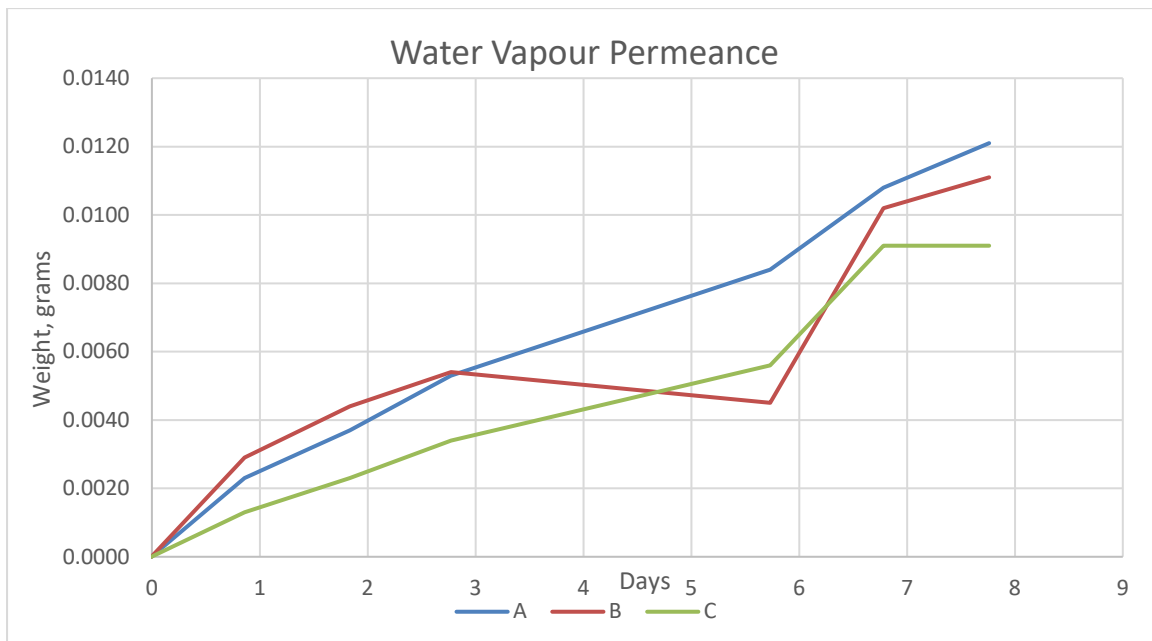


Figure 2. Water vapour permeance plot



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Due to the low or near zero WVTR, the resolution requirements of ASTM E96-22 section 6 cannot be met.

4.3 Resistance to Cyclic Movement

Testing carried out in accordance with AS 4654.1 Appendix B. Test results are given in Table 6.

Test deviations.

No deviations were recorded.

Test conditions

Material class	II
Cycle time	2 hours
Cyclic extension (mm)	0.78
Rate of extension (mm/min)	0.013
Number of cycles completed:	50

Table 6: Resistance to cyclic movement results

Observation date	Cycle count	Daily observation and defects observed
11/07/2025	0	Test Started
11/07/2025	0.5	Test running correctly
15/07/2026	50	No damage found at full extension

Acceptance criteria:

Any rupture holing the specimen or extending through the thickness for more than 1 mm in from the specimen's edge shall be considered a failure.

The tested membrane meets the requirements of the Resistance to Cyclic Movement test.

4.4 Durability

Testing was carried out in accordance with AS 4654.1 Appendix A.

Test deviations.

No deviations were recorded.



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Test conditions

Test specimen type	Type 2
Specimen preparation method	Roll of tape
Average test conditions	23°C ± 2°C
	50%RH ± 10%RH
Test machine accuracy grading	A
Elongation indicator	Extensometer with 50mm gauge length
Grip type	Pneumatic
Test speed (mm/min)	100

Note: All specimens are held at 23°C ± 2°C and 65 %RH ± 15 %RH and are only removed immediately before ageing or testing.

4.4.1 Control testing

Control tensile test results are given in Table 7.

Table 7: Control tensile results

Specimen number	Thickness (mm)	Tensile strength (MPa)	% elongation
1	0.82	3.0	76.8
2	0.80	2.8	66.0
3	0.80	3.2	86.6
4	0.77	2.7	51.8
5	0.79	2.8	66.8
6	0.80	2.8	86.1
Average	0.80	2.9	72.4
SD	0.02	0.2	13.5

No specimens have been rejected or replaced.

The average recorded membrane thickness of the six samples was 0.80 mm. The average recorded tensile strength of the six samples was 2.9 MPa.

Membrane classification criteria based on control testing.

Membrane classification	Acceptance limit % elongation at break
Class I	<60%
Class II	60% - 299%
Class III	≥300%

The average recorded % elongation at break of the six samples tested was 72.4 %. Based on the mean recorded % elongation at break, the membrane meets the requirements of Class II.



4.4.2 Water immersion

Water immersion tensile test results are given in Table 8.

Table 8: Water immersion tensile results

Exposure Period	Specimen Number	Thickness (mm)	Tensile Strength (MPa)	% elongation at break
7 day water immersion	1	0.81	3.5	74.3
	2	0.78	3.3	75.2
	3	0.78	3.5	78.1
	4	0.79	3.4	91.7
	5	0.79	3.3	86.8
	6	0.77	3.2	59.6
	Average	0.79	3.4	77.6
	SD	0.01	0.1	11.2
	7 day percentage retention at break			
28 day water immersion	1	0.81	2.7	62.7
	2	0.78	3.4	90.5
	3	0.79	3.2	71.7
	4	0.79	3.4	70.9
	5	0.80	3.1	78.9
	6	0.79	3.4	61.7
	Average	0.79	3.2	72.7
	SD	0.01	0.3	10.8
	28 day percentage retention at break			
56 day water immersion	1	0.78	3.0	64.2
	2	0.77	3.1	82.1
	3	0.78	3.5	78.9
	4	0.81	3.3	56.0
	5	0.80	3.4	71.2
	6	0.77	3.2	81.3
	Average	0.79	3.2	72.3
	SD	0.02	0.2	10.5
	56 day percentage retention at break			

Note: Thickness measurements used are of specimens before ageing.

Test observations:

No significant change in appearance was noted.

Acceptance criteria for water immersed samples:

The average elongation at break of the exposed specimens shall be $\geq 25\%$ of that of the control samples.



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The recorded retention of elongation at break was 100%. Based on the mean retention of elongation at break this membrane meets the requirements of this test.

4.4.3 Detergent immersion

Detergent immersion tensile test results are given in Table 9.

Table 9: Detergent immersion tensile results


Exposure Period	Specimen Number	Thickness (mm)	Tensile Strength (MPa)	% elongation at break
7 day n8 immersion	1	0.76	3.2	70.2
	2	0.77	3.1	48.5
	3	0.77	3.4	73.5
	4	0.78	3.3	59.8
	5	0.79	3.3	77.4
	6	0.79	3.1	58.7
	Average	0.78	3.2	64.7
	SD	0.01	0.1	10.9
7 day percentage retention at break				89%
28 day n8 immersion	1	0.78	3.2	66.0
	2	0.80	3.4	61.1
	3	0.79	2.9	76.7
	4	0.79	3.4	86.9
	5	0.78	2.6	61.5
	6	0.78	3.3	74.8
	Average	0.79	3.1	71.2
	SD	0.01	0.3	10.1
28 day percentage retention at break				98%
56 day n8 immersion	1	0.78	3.1	74.9
	2	0.80	3.1	67.4
	3	0.79	3.1	49.1
	4	0.79	3.1	59.5
	5	0.78	3.3	78.1
	6	0.78	3.3	71.2
	Average	0.79	3.2	66.7
	SD	0.01	0.1	10.7
56 day percentage retention at break				92%

Note: Thickness measurements used are of specimens before ageing.

Test observations:

No significant change in appearance was noted.

Acceptance criteria for detergent immersed samples:

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The average elongation at break of the exposed specimens shall be $\geq 25\%$ of that of the control samples.

The recorded retention of elongation at break was 92%. Based on the mean retention of elongation at break this membrane meets the requirements of this test.

4.4.4 Heat Aging

Heat aging tensile test results are given in Table 10.

Table 10: Heat aging tensile results.

Exposure Period	Specimen Number	Thickness (mm)	Tensile Strength (MPa)	% elongation at break
Heat Ageing	1	0.79	3.0	63.4
	2	0.79	3.2	62.3
	3	0.77	3.4	51.5
	4	0.80	3.1	48.4
	5	0.78	2.9	59.1
	6	0.79	3.0	48.6
	Average	0.79	3.1	55.5
	SD	0.01	0.2	6.9
	Heat Ageing percentage retention at break			

Note: Thickness measurements used are of specimens before ageing.

Test observations:

No significant change in appearance was noted.

Acceptance criteria for heat aged samples:

The average elongation at break of the exposed specimens shall be $\geq 50\%$ of that of the control samples.

The recorded retention of elongation at break was 77%. Based on the mean retention of elongation at break this membrane meets the requirements of this test.



4.4.5 Temperature resistance

Temperature resistance tensile test results are given in Table 11.

Table 71: Temperature resistance tensile results.

Exposure Period	Specimen Number	Thickness (mm)	Tensile Strength (MPa)	% elongation at break
Temperature Resistance	1	0.79	3.0	50.1
	2	0.81	2.9	59.5
	3	0.79	3.0	46.8
	4	0.80	3.2	69.7
	5	0.79	3.2	64.9
	6	0.81	3.1	55.3
	Average	0.80	3.1	57.7
	SD	0.01	0.1	8.7
	Temp. resistance percentage retention at break			

Note: Thickness measurements used are of specimens before ageing.

Test observations:

No significant change in appearance was noted.

The recorded retention % elongation at break was 80%.

5. REFERENCES

AS 4654.1-2012, Waterproofing membranes for external above-ground use Materials.

AS 1145.1-2001, Determination of tensile properties of plastics materials General principles.

AS 1145.3-2001, Determination of tensile properties of plastics materials - Part 3: Test conditions for films and sheet.

ASTM E96-22, Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials.

ASTM C794-18(2022), Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.



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