TEST REPORT

Accredited for compliance with ISO/IEC 17025 – Testing
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TEST SUMMARY

Objective

Assessment of supplied sample to AS/NZS 4858:2004

Project

Assessment of Actflex 989 to AS/NZS 4858:2004

Report Number

374-7 AS/NZS 4858:2004

Customer

NAME	Forspec Protective Coatings
ADDRESS	22/872 Canterbury Road, Roselands 2196 NSW
CONTACT PERSON	James Gilto
EMAIL	Info@forspec.com.au
TELEPHONE	02 8021 3517

Name of test material

Actflex 989

Description of test material

2 Part flexible cementitious membrane

Date of receipt of test material

2/10/2024

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Testing Facility and Location

NAME	XTec Gen Pty Ltd
ADDRESS	30-32 Park Avenue Woodville North 5012
ABN	22634729294

LIMITATION

The test results reported here relate only to the items tested.

CUSTOMER SUPPLIED INFORMATION & DATA

Number of Coats: 2

Wet film thickness per coat: 1mm

Expected dry film thickness: 0.65mm per coat total 1.2mm (dried film supplied)

TERMS AND CONDITIONS

This report is issued in accordance with the Terms and Conditions as detailed and agreed in the *XTecGen Test Request and Sample Submission Form*.

SIGNATORIES

Author

Michael Bakanyozo

Head Laboratory Technician

Reviewer

Eric Scardigno

Laboratory Manager

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SUMMARY OF TESTS

AS4858 Requirements:

PROPERTY	METHOD	RESULT	ASSESSMENT CRITERIA	ASSESSMENT
Durability[1]: Control Elongation at break	*AS1145.3*	***345%***	*AS 4858 Table 5.1*	**CLASS III**
Durability[1]: Control Tensile Strength		***1.52MPa***		
Durability[1]: Water Immersion Elongation at break	*N/A*	***341%***	*AS 4858 Table A1*	**PASS**
Durability[1]: Water immersion Tensile Strength		***0.46MPa***		
Durability[1]: Bleach Immersion Elongation at break		***333%***		**PASS**
Durability[1]: Bleach Immersion Tensile Strength		***0.46MPa***		
Durability[1]: Detergent Immersion Elongation at break		***329%***		**PASS**
Durability[1]: Detergent Immersion Tensile Strength		***0.44MPa***		
Durability[1]: Heat aging Elongation at break	*N/A*	***253%***	*AS 4858 Table A1*	**PASS**
Durability[1]: Heat aging Tensile Strength		***2.18MPa***		
Water Absorption	*AS 3558.1 (with sample size modified to be*	***1.77%***	*AS 4858 Table 8.1*	

	50mm x 50mm by the thickness used in practice).			
Moisture vapour transmission rate	*ASTM E96 Desiccant method*	***0.90 g/m²/24 hours***	*AS 4858 Table 8.1*	Additional testing as per AS4858.1 Table 8.1 (e) is not required to establish suitability for use over particleboard.

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DURABILITY OF MEMBRANE

CONTROL SET

Date of test: 22/10/2024

Testing: Test carried out in accordance with AS 1145.3.

Additions, deviations and/or exclusions from AS 1145.3: Nil

Test Parameters:

PARAMETER	VALUE
Ambient temperature (conditioning)	23.3-24.2°C
Ambient humidity (conditioning)	32.2-44.0%RH
Ambient temperature (testing)	25°C
Ambient humidity (testing)	42.5% RH
Accuracy grading of test machine	A
Specimen type	Type 5
Elongation measurement type:	Electronic internal measurement
Method of preparation of specimens	Dry film provided
Orientation of specimens to direction of cast	Parallel to direction of casting blade
Clamping device:	Pneumatic jaws
Testing speed:	50mm/min

Test Results:

Replicate	Sample thickness (mm)	Maximum Extension (mm)	Maximum Stress (MPa)	Maximum Strain (%)
1	1.25	74.9	1.55	300
2	1.28	85.5	1.72	342
3	1.26	91.6	1.34	366
4	1.37	84.0	1.68	336
5	1.32	94.8	1.33	379
Mean	1.30	86.2	1.52	345
Std Deviation	0.05	7.7	0.19	31

Requirement for Class III (high extensibility): ≥300% elongation at break

Requirement for Class II (medium extensibility) 60-299% elongation at break

Requirement for Class I (low extensibility) <60% elongation at break.

Classification: Class III

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DURABILITY OF MEMBRANE

WATER IMMERSION

Date of test: 31/10-19/12/2024

Testing:

Test carried out in accordance with AS 4858 Table A1.

Additions, deviations and/or exclusions from AS 4858 Table A1:

Nil

Test Parameters:

PARAMETER	VALUE
Ambient temperature (conditioning)	23.3-24.2°C
Ambient humidity (conditioning)	32.2-44.0%RH
Ambient temperature (testing)	23.9-24.7°C
Ambient humidity (testing)	38-45.1% RH
Minimum accuracy grading of test machine	A
Specimen type	Type 5
Elongation measurement type:	Electronic internal measurement
Method of preparation of specimens	Dry film provided
Orientation of specimens to direction of cast	Parallel to direction of casting blade
Clamping device:	Pneumatic jaws
Testing speed:	50mm/min

Test Results:

Sample Number	Sample thickness (mm)	Maximum Extension (mm)	Tensile strength (MPa)	Elongation at break (%)
1	1.39	93.4	0.47	373
2	1.37	82.1	0.48	328
3	1.40	86.9	0.44	347
7 Day Means	1.39	87.4	0.47	350
7 Day Std Devs	0.02	5.7	0.02	23
4	1.45	87.5	0.48	350
5	1.43	88.9	0.45	355
6	1.46	85.8	0.44	343
28 Day Means	1.45	87.4	0.46	350
28 Day Std Devs	0.01	1.5	0.02	6
7	1.46	99.9	0.46	400

8	1.50	82.6	0.45	330
9	1.53	73.6	0.49	294
56 Day Means	1.50	85.4	0.46	341
56 Day Std Devs	0.04	13.4	0.02	53

Passing Requirement*: "Elongation at break shall not be less than 50% of that of the controls for the bond breakers given in Table 6.1 [AS4848]. For an elongation between 50% and 25% of the controls the membrane requires additional bond relief above that given in [AS4858] Table 6.1. A failure is for less than 25% retention of elongation at break of the controls".*

To pass this condition an elongation at break value of 87% or greater is required.

Result: 341% PASS

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DURABILITY OF MEMBRANE

BLEACH IMMERSION

Date of test: 31/10-19/12/2024

Testing:

Test carried out in accordance with AS 4858 Table A1.

Additions, deviations and/or exclusions from AS 4858 Table A1:

Nil

Test Parameters:

PARAMETER	VALUE
Ambient temperature (conditioning)	23.3-24.2°C
Ambient humidity (conditioning)	32.2-44.0%RH
Ambient temperature (testing)	23.9-24.7°C
Ambient humidity (testing)	38-45.1% RH
Minimum accuracy grading of test machine	A
Specimen type	Type 5
Elongation measurement type:	Electronic internal measurement
Method of preparation of specimens	Dry film provided
Orientation of specimens to direction of cast	Parallel to direction of casting blade
Clamping device:	Pneumatic jaws
Testing speed:	50mm/min

Test Results:

Sample Number	Sample thickness (mm)	Maximum Extension (mm)	Tensile strength (MPa)	Elongation at break (%)
1	1.43	55.7	0.38	223
2	1.47	49.8	0.39	199
3	1.50	70.8	0.38	283
7 Day Means	1.47	58.8	0.38	235
7 Day Std Devs	0.04	10.9	0.01	44
4	1.48	79.4	0.46	318
5	1.49	59.1	0.44	236
6	1.48	98.6	0.43	394
28 Day Means	1.48	79.0	0.44	316
28 Day Std Devs	0.01	19.7	0.01	79
7	1.48	81.7	0.47	327

8	1.48	73.7	0.48	295
9	1.50	94.5	0.44	378
56 Day Means	1.49	83.3	0.46	333
56 Day Std Devs	0.02	10.5	0.02	42

Passing Requirement: *"Elongation at break shall not be less than 50% of that of the controls for the bond breakers given in Table 6.1 [AS4848]. For an elongation between 50% and 25% of the controls the membrane requires additional bond relief above that given in [AS4858] Table 6.1. A failure is for less than 25% retention of elongation at break of the controls*".

To pass this condition an elongation at break value of 87% or greater is required.

Result: 333% PASS

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DURABILITY OF MEMBRANE

DETERGENT IMMERSION

Date of test: 31/10-19/12/2024

Testing:

Test carried out in accordance with AS 4858 Table A1.

Additions, deviations and/or exclusions from AS 4858 Table A1:

Nil

Test Parameters:

PARAMETER	VALUE
Ambient temperature (conditioning)	23.3-24.2°C
Ambient humidity (conditioning)	32.2-44.0%RH
Ambient temperature (testing)	23.9-24.7°C
Ambient humidity (testing)	38-45.1% RH
Minimum accuracy grading of test machine	A
Specimen type	Type 5
Elongation measurement type:	Electronic internal measurement
Method of preparation of specimens	Dry film provided
Orientation of specimens to direction of cast	Parallel to direction of casting blade
Clamping device:	Pneumatic jaws
Testing speed:	50mm/min

Test Results: Detergent Immersion

Sample Number	Sample thickness (mm)	Maximum Extension (mm)	Tensile strength (MPa)	Elongation at break (%)
1	1.25	61.0	0.44	244
2	1.30	62.9	0.44	251
3	1.32	77.2	0.45	309
7 Day Means	1.29	67.0	0.44	268
7 Day Std Devs	0.03	8.9	0.01	36
4	1.40	67.5	0.46	270
5	1.39	69.7	0.48	279
6	1.41	72.1	0.49	288
28 Day Means	1.40	69.8	0.48	279
28 Day Std Devs	0.01	2.3	0.02	9
7	1.44	96.1	0.43	385

8	1.43	77.6	0.46	310
9	1.43	73.4	0.43	293
56 Day Means	1.43	82.4	0.44	329
56 Day Std Devs	0.01	12.1	0.02	48

Passing Requirement: *"Elongation at break shall not be less than 50% of that of the controls for the bond breakers given in Table 6.1 [AS4848]. For an elongation between 50% and 25% of the controls the membrane requires additional bond relief above that given in [AS4858] Table 6.1. A failure is for less than 25% retention of elongation at break of the controls".*

To pass this condition an elongation at break value of 87% or greater is required.

Result: 329% PASS

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DURABILITY OF MEMBRANE

HEAT AGING

Date of test: 30/10/2024

Testing:

Test carried out in accordance with AS 4858 Table A1.

Additions, deviations and/or exclusions from AS 4858 Table A1:

Nil

Test Parameters:

PARAMETER	VALUE
Ambient temperature (conditioning)	23.3-24.2°C
Ambient humidity (conditioning)	32.2-44.0%RH
Ambient temperature (testing)	24.2°C
Ambient humidity (testing)	33.3% RH
Accuracy grading of test machine	A
Specimen type	Type 5
Elongation measurement type:	Electronic internal measurement
Method of preparation of specimens	Dry film provided
Orientation of specimens to direction of cast	Parallel to direction of casting blade
Clamping device:	Pneumatic jaws
Testing speed:	50mm/min

Test Results:

Number of replicates	Sample thickness (mm)	Maximum Extension (mm)	Tensile strength (MPa)	Elongation at break (%)
1	1.30	70.2	1.86	281
2	1.33	62.7	2.26	251
3	1.30	57.2	2.41	229
Mean	1.31	63.4	2.18	253
Std Deviation	0.02	6.5	0.28	26

Passing Requirement*: "Elongation at break shall not be less than 50% of the result recorded for the control"*

To pass this condition an elongation at break value of 173% or greater is required.

Result: 253% PASS

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WATER ABSORPTION

Date of test: 22/10/2024

Testing:

Test carried out in accordance with AS 3558.1.

Additions, deviations and/or exclusions from AS 3558.1:

Per AS 4858, sample dimensions modified to be 50mm*50mm.

Test Results:

SAMPLE	THICKNESS (mm)	WATER ABSORPTION		
		MASS (m1) (g)	MASS (m2) (g)	MASS DIFFERENCE (%)
1	1.29	5.8062	5.9119	1.82
2	1.34	6.0612	6.1617	1.66
3	1.36	6.1401	6.2532	1.84
Mean	1.33	6.00	6.11	1.77
Std Deviation	0.04	0.17	0.18	0.10

Result: 1.77%

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WATER VAPOUR TRANSMISSION RATE

Date of test: 21/10-4/11/2024

Testing:

Test carried out in accordance with ASTM E96 Desiccant Method.

Additions, deviations and/or exclusions from ASTM E96 Desiccant Method:

Nil

Test Parameters:

PARAMETER	VALUE
Test temperature:	23.1-25.0°C
Test humidity:	39.2-44.8% RH
Cup design:	Round, anodised aluminium cup
Sealant:	Paraffin Wax
Desiccant:	Anhydrous Calcium Chloride

Test Results

SAMPLE	THICKNESS (mm)	SIDE OF SPECIMEN HIGHER VAPOUR PRESSURE WAS APPLIED TO	REGRESSION		WATER VAPOUR TRANSMISSION RATE (g/m^2/24 hours)
			EQUATION	r^2 VALUE	
1	1.29	Side A, top of cast film	$Mass_{(g)}=0.0001(Time_{hr})+176.40$	0.9980	0.72
2	1.20	Side A, top of cast film	$Mass_{(g)}=0.0002(Time_{hr})+175.32$	0.9984	1.45
3	1.37	Side B, bottom of cast film	$Mass_{(g)}=0.0001(Time_{hr})+176.20$	0.9975	0.72
4	1.42	Side B, bottom of cast film	$Mass_{(g)}=0.0001(Time_{hr})+177.31$	0.9976	0.72
Mean	1.32				0.90
Std Deviation	0.10				0.36

Result: 0.90 g/m^2/24 hours.

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END OF REPORT