AWQC

Internet: www.awqc.com.au

Email: producttesting@awgc.com.au

Ardex New Zealand Limited Attn: Vijay Nair 32 Lane Street Woolston, Christchurch

NEW_ZEALAND

05/10/2022

Dear Vijay,

Please find the attached report to AS/NZS 4020:2018 for WPM715 G (Grey) submitted for testing.

Should you have any enquiries about the report or any other matters pertaining to the Standard please contact the laboratory on 61 8 7424 1512

Yours sincerely,

Michael Glasson

Supervisor Product Testing





M Marion.

SAW_PT_Final_2018.RPT

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Internet: www.awqc.com.au FINAL REPORT

Report ID: 347630

Report Information

Submitting Organisation: 0012083 : Ardex New Zealand Limited

Account: 141947 : Ardex New Zealand Limited

AWQC Reference: 141947-2022-CSR-1: Prod Test: Membrane 1

Project Reference: PT-4984

Product Designation: WPM715 G (Grey)

Composition of Product: Weldtec Butyl Membrane (Grey and Black).

Product Manufacturer: Ardex NZ Ltd., Woolston, Christchurch, NEW ZEALAND.

Use of Product: In-Line/Waterproofing Membrane for Roof Top.

Sample Selection: As provided by the submitting organisation.

Testing Requested: AS/NZS 4020:2018 TESTING OF PRODUCTS FOR USE IN CONTACT WITH DRINKING

WATER

Product Type: Composite

Samples: Samples were prepared and controlled as described in Appendix A of AS/NZS 4020:2018

Extracts: Extracts were prepared as described in Appendix/Clause C, D, E, F, H, 6.8.

Project Completion Date: 05-Oct-2022

Project Comment: Samples received on the 27-Jun-2022, testing commenced 08-Jul-2022.

PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL

THE RESULTS STATED IN THIS REPORT RELATE TO THE SAMPLE OF THE PRODUCT SUBMITTED FOR TESTING TO ASNZS 4020:2018. ANY CHANGES IN THE MATERIAL FORMULATION, PROCESS OF MANUFACTURE, THE METHOD OF APPLICATION, OR THE SURFACE AREA-TO-VOLUME RATIO IN THE END USE, COULD AFFECT THE SUITABILITY OF THE PRODUCT FOR USE IN CONTACT WITH DRINKING WATER



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Notes

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Summary of Results

APPENDIX/CLAUSE	RESULTS
C - Taste	Passed at an exposure of 9750 mm²/L (each side of material).
D — Appearance	Passed at an exposure of 15000 mm²/L (each side of material).
E — Growth of Aquatic Micro-organisms	Passed at an exposure of 9750 mm²/L (each side of material) with a 0.65 scaling factor applied.
F — Cytotoxic Activity	Passed at an exposure of 15000 mm²/L (each side of material).
H — Metals	Passed at an exposure of 15000 mm²/L (each side of material).
6.8 — Organic Compounds	Passed at an exposure of 15000 mm²/L (each side of material).

Test Methods

Test(s) in Appendix	AWQC Test Method	NATA Accredited
С	T0320-01	Y
D	TO029-01 & TO018-01	Y
Е	TO014-03	Y
F	TM-001	Y
Н	TIC-006	Y

Organic Test Methods

Test(s) in Clause	Test Method	NATA Accredited
Clause 6.8	TMZ-M36	Y
	EP239	Υ
	EP132-LL	Υ
	EP075C	Y
	EP075ASIM	Υ





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Chemical and Biological Testing

PO Box 1751 250 Victoria Square Adelaide SA 5001 Adelaide SA 5000 Tel: 1300 653 366 Fax: 1300 883 171

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Laboratory Information

Laboratory	NATA accreditation ID
Product Testing	1115
Australian Laboratory Services Pty Ltd - New South Wales	825,992
Inorganic Chemistry - Physical	1115
Protozoology	1115
Organic Chemistry	1115
Inorganic Chemistry - Metals	1115
Inorganic Chemistry - Waste Water	1115

Summary Comment : Not applicable.





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- measurement-uncertainty

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CLAUSE 6.2 Taste

Sample Description The sample consisted of one panel measuring 75 mm x 100 mm giving an approximate

surface area of 9750 mm² per Litre (each side of the material - grey and black). Extracts

were prepared using 770 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Taste (Appendix C)

Test Information

Scaling Factor Not applicable.

Results Not detected (sample and controls).

Evaluation The product passed the requirements of Clause 6.2 when tested at an exposure of 9750 mm²

per Litre (per side).

Number of Samples 2.

Test Comment Not applicable.

Michael Glasson
APPROVED SIGNATORY



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CLAUSE 6.3 Appearance

Sample Description The sample consisted of two panels measuring 75 mm x 100 mm giving an approximate

surface area of 15000 mm² per Litre (each side of the material - grey and black). Extracts

were prepared using 1000 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Appearance (Appendix D)

Scaling Factor Not applicable.

Results

	<u>Test (- Blank)</u>	Maximum Allowed	<u>Units</u>
Colour	<1	5	HU
Turbidity	<0.1	0.5	NTU

Evaluation The product passed the requirements of Clause 6.3 when tested at an exposure of 15000

mm² per Litre(per side).

Number of Samples 1.

Test Comment Not applicable.

Andrew Ford
APPROVED SIGNATORY



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CLAUSE 6.4 Growth of Aquatic Micro-organisms

Sample Description The sample consisted of two panels measuring 75 mm x 100 mm giving an approximate

surface area of 15000 mm² per Litre (each side of the material - grey and black). Extracts

were prepared using 1000 mL volumes of test water.

Test Method Growth of Aquatic Micro-organisms (Appendix E)

Inoculum The volume of the inoculum was 100 mL

Scaling Factor A scaling factor of 0.65 was applied.

Results

Mean Dissolved Oxygen Control 7.6 mg/L

Mean Dissolved Oxygen Difference Positive Reference 5.6 mg/L

Negative Reference 0.1 mg/L

Test 2.40 mg/L

Evaluation The product passed the requirements of Clause 6.4 when tested at an exposure of 9750 mm²

per Litre (per side) with a 0.65 scaling factor applied.

Number of Samples 1.

Test CommentThe Mean Dissolved Oxygen Difference in the extracts exceeded the maximum allowable

concentration. A scaling factor of 0.65 was applied to meet the requirements of Clause 6.4.

Thuy Diep
APPROVED SIGNATORY



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CLAUSE 6.5 Cytotoxic Activity

Sample Description The sample consisted of two panels measuring 75 mm x 100 mm giving an approximate

surface area of 15000 mm² per Litre (each side of the material - grey and black). Extracts

were prepared using 1000 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Cytotoxic Activity (Appendix F)

Scaling Factor Not applicable.

Results 24 HR Non-cytotoxic response, healthy cell morphology with <30% cell death

48 HR Non-cytotoxic response, healthy cell morphology with <30% cell death

72 HR Non-cytotoxic response, healthy cell morphology with <30% cell death

Blank Control Results Blank; non-cytotoxic response, healthy cell morphology with <30% cell death

Positive Control Results Positive control; Cytotoxic response, unhealthy cell morphology with >70% cell death

The test extracts and blank extracts were used to prepare nutrient growth medium and subsequently used to grow a cell line (ATCC Number CCL 81) in the analysis. In addition

zinc sulphate (0.4 mmol) was used for the positive control in the analysis.

Evaluation The product passed the requirements of Clause 6.5 when tested at an exposure of 15000

mm² per Litre (per side).

Number of Samples 1.

Test Comment Not applicable.

Mira Maric APPROVED SIGNATORY



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CLAUSE 6.7 Metals

Sample Description The sample consisted of two panels measuring 75 mm x 100 mm giving an approximate

surface area of 15000 mm² per Litre (each side of the material - grey and black). Extracts

were prepared using 1000 mL volumes of 50 mg/L hardness water.

Extraction Temperature 20°C ± 2°C.

Test Method Metals (Appendix H)

Scaling Factor Not applicable.

Method of Analysis Concentration of the metals described in Table 2 of the AS/NZS 4020:2018 are determined

as follows:

Aluminium, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium and Silver by Inductively Coupled

Plasma Mass Spectrometry.

Results	Limit of Reporting mg/L	Blank mg/L	Test 1 mg/L	Test 2 mg/L	Max Allowed mg/L
Final Extract					
Aluminium	0.001	0.010	0.006	0.005	0.2
Antimony	0.0005	<0.0005	<0.0005	< 0.0005	0.003
Arsenic	0.0003	< 0.0003	< 0.0003	< 0.0003	0.01
Barium	0.0005	<0.0005	<0.0005	< 0.0005	0.7
Boron	0.020	0.116	0.124	0.124	1.4
Cadmium	0.0001	<0.0001	<0.0001	< 0.0001	0.002
Chromium	0.0001	<0.0001	<0.0001	< 0.0001	0.05
Copper	0.0001	<0.0001	<0.0001	< 0.0001	2.0
Iron	0.0005	<0.0005	< 0.0005	< 0.0005	0.3
Lead	0.0001	< 0.0001	< 0.0001	< 0.0001	0.01
Manganese	0.0001	<0.0001	<0.0001	<0.0001	0.1
Mercury	0.00003	<0.00003	<0.00003	<0.00003	0.001
Molybdenum	0.0001	<0.0001	< 0.0001	< 0.0001	0.05
Nickel	0.0001	<0.0001	< 0.0001	< 0.0001	0.02
Selenium	0.0001	<0.0001	<0.0001	< 0.0001	0.01
Silver	0.00003	<0.00003	<0.00003	<0.00003	0.1

Evaluation The product passed the requirements of Clause 6.7 when tested at an exposure of 15000

mm² per Litre (per side).

Number of Samples 1.

Test Comment Not applicable.

Dzung Bui APPROVED SIGNATORY



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CLAUSE 6.8 Organic Compounds

Sample Description The sample consisted of two panels measuring 75 mm x 100 mm giving an approximate surface

area of 15000 mm² per Litre (each side of the material - grey and black). Extracts were prepared

using 1000 mL volumes of 50 mg/L hardness water.

Extraction Temperature $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Test Method Organic Compounds (Clause 6.8). The maximum allowed (Max Allowed) values are taken from

the Australian Drinking Water Guidelines and Drinking-water Standards for New Zealand. Please

note, some reported compounds have no guideline value.

Scaling Factor Not applicable.

Results

Organic Compound

Nitrosamines	Blank	Test	Max Allowed
	μg/L	μg/L	
!External Lab Report No.	ES2225869	ES2225869	
1-Nitrosopiperidine (NPip)	< 0.003	<0.003	
1-Nitrosopyrrolidine (NPyr)	<0.01	<0.01	
Nitrosomorpholine (NMor)	<0.003	< 0.003	
N-Nitrosodiethylamine (NDEA)	<0.01	<0.01	
N-Nitrosodimethylamine (NDMA)	<0.003	0.008	0.1 μg/L
N-Nitrosodi-n-propylamine (NDPA)	<0.003	< 0.003	
N-Nitrosomethylethylamine (NMEA)	< 0.003	< 0.003	

Organic Compound

organio compound			
Phenois	Blank	Test	Max Allowed
	μg/L	μg/L	
!External Lab Report No.	ES2225869	ES2225869	
2 4 5-trichlorophenol	<1.0	<1.0	
2 4 6-trichlorophenol	<1.0	<1.0	20 μg/L
2 4-dichlorophenol	<1.0	<1.0	200 μg/L
2 4-dimethylphenol	<1.0	<1.0	
2 6-dichlorophenol	<1.0	<1.0	
2-chlorophenol	<1.0	<1.0	300 μg/L
2-nitrophenol	<1.0	<1.0	
4-chloro-3-methylphenol	<1.0	<1.0	
m+p cresol	<2.0	<2.0	
o-cresol	<1.0	<1.0	
pentachlorophenol	<2.0	<2.0	9 μg/L
phenol	<1.0	<1.0	





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Organic	Compound
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Phthalate Esters	Blank μg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2225869	ES2225869	
Bis(2-ethylhexyl) phthalate	<10	<10	10 μg/L
Butyl benzyl phthalate	<2	<2	
Di(2-ethylhexyl) adipate	<2	<2	
Diethyl phthalate	<2	<2	
Dimethyl phthalate	<2	<2	
Di-n-butyl phthalate	<2	<2	
Di-n-octyl phthalate	<2	<2	

0

, ,			
Organic Compound			
Polycyclic Aromatic Hydrocarbons	Blank	Test	Max Allowed
	μg/L	μg/L	
!External Lab Report No.	ES2225869	ES2225869	
Acenaphthene	<0.02	<0.02	
Acenaphthylene	<0.02	<0.02	
Anthracene	<0.02	<0.02	
Benzo(a)anthracene	<0.02	<0.02	
Benzo(a)pyrene	<0.005	<0.005	0.01 µg/L
Benzo(a)pyrene TEQ	<0.006	<0.006	
Benzo(b+j)fluoranthene	<0.02	<0.02	
Benzo(ghi)perylene	<0.02	<0.02	
Benzo(k)fluoranthene	<0.02	<0.02	
Chrysene	<0.02	<0.02	
Dibenzo(a-h)anthracene	<0.02	<0.02	
Fluoranthene	<0.02	<0.02	
Fluorene	<0.02	<0.02	
Indeno(123-cd)pyrene	<0.02	<0.02	
Naphthalene	<0.02	<0.02	
PAH - Total	<0.005	<0.005	
Phenanthrene	<0.02	<0.02	
Pyrene	<0.02	<0.02	





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Organic Compound

Organic Compound			
Volatile Organic Compounds GCMS	Blank	Test	Max Allowed
	μg/L	μg/L	
1 1 1 2-Tetrachloroethane	<1	<1	
1 1 1-Trichloroethane	<1	<1	
1 1 2 2-Tetrachloroethane	<1	<1	
1 1 2-Trichloroethane	<1	<1	
1 1-Dichloropropene	<1	<1	
1 2 3-Trichlorobenzene	<1	<1	
1 2 3-Trichloropropane	<1	<1	
1 2 4-Trichlorobenzene	<1	<1	
1 2 4-Trimethylbenzene	<1	<1	
1 2-Dibromo-3-chloropropane	<1	<1	1 μg/L
1 2-Dibromoethane	<1	<1	1 μg/L
1 2-Dichlorobenzene	<1	<1	1500 µg/L
1 2-Dichloroethane	<1	<1	3 μg/L
1 2-Dichloropropane	<1	<1	
1 3 5-Trimethylbenzene	<1	<1	
1 3-Dichlorobenzene	<1	<1	
1 3-Dichloropropane	<1	<1	
1 4-Dichlorobenzene	<1	<1	40 μg/L
1,1-Dichloroethane	<1	<1	
1,1-Dichloroethene	<1	<1	30 μg/L
2,2-Dichloropropane	<1	<1	
2-Chlorotoluene	<1	<1	
4-Chlorotoluene	<1	<1	
4-Isopropyltoluene	<1	<1	
Benzene	<1	<1	1 μg/L
Bromobenzene	<1	<1	
Bromochloromethane	<1	<1	
Bromodichloromethane	<1	<1	60 μg/L
Bromoform	<1	<1	100 μg/L
Bromomethane	<4	<4	
Carbon tetrachloride	<1	<1	3 μg/L
Chlorobenzene	<1	<1	300 μg/L
Chloroethane	<4	<4	
Chloroform	<1	2	400 μg/L
Chloromethane	<4	<4	
cis-1 3-Dichloropropene	<1	<1	
cis-1,2-Dichloroethene	<1	<1	
Dibromochloromethane	<1	<1	150 μg/L
Dibromomethane	<1	<1	
Dichlorodifluoromethane	<1	<1	
Dichloromethane	<4	<4	4 μg/L
Ethylbenzene	<1	<1	300 µg/L
Hexachlorobutadiene	<0.7	<0.7	0.7 μg/L
Isopropylbenzene	<1	<1	
m+p-Xylenes - Total	<2	<2	



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Volatile Organic Compounds Go	CMS Blank	Test	Max Allowed
	μg/L	μg/L	
Naphthalene	<1	<1	
n-Butylbenzene	<1	<1	
n-Propylbenzene	<1	<1	
o-Xylene	<1	<1	
sec-Butylbenzene	<1	<1	
Styrene	<1	<1	30 μg/L
tert-Butylbenzene	<1	<1	
Tetrachloroethene	<1	<1	50 μg/L
Toluene	<1	<1	800 μg/L
Total 1 2-dichloroethene	<2	<2	60 μg/L
Total 1 3-dichloropropene	<2	<2	20 μg/L
Total Trichlorobenzene	<2	<2	30 μg/L
Total Xylene	<3	<3	600 µg/L
trans-1 3-Dichloropropene	<1	<1	
trans-1,2-Dichloroethene	<1	<1	
Trichloroethene	<1	<1	
Trichlorofluoromethane	<1	<1	
Trihalomethanes - Total	<4	<4	250 μg/L
Vinyl chloride	<0.3	<0.3	0.3 μg/L

Evaluation The product passed the requirements of Clause 6.8 when tested at an exposure of 15000 mm²

per Litre (per side).

Number of Samples

Test Comment Not applicable.

Qiong Huang

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