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Ardex Australia Pty Ltd
Attn: Charles Smith
7/20 Powers Road
Seven Hills
NSW 2147
AUSTRALIA

21/10/2021

Dear Charles,

Please find the attached report to AS/NZS 4020:2018 for Ardex BR345 Patching and Repair Mortar 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



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FINAL REPORT

Report ID : 322625

Report Information

Submitting Organisation : 00109252 : Ardex Australia Pty Ltd
Account : 130232 : Ardex Australia Pty Ltd
AWQC Reference : 130232-2021-CSR-1 : Prod Test: Ardex BR345
Project Reference : PT-4737
Product Designation : Ardex BR345 Patching and Repair Mortar
Composition of Product : Information requested but not provided by submitting organisation.
Product Manufacturer : ARDEX Australia Pty Ltd, Powers Rd, Seven Hill, NSW, AUSTRALIA.
Use of Product : In-Line/Structural Concrete Patching and Repair Mortar.
Sample Selection: As provided by the submitting organisation.
Testing Requested : **AS/NZS 4020 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 H, 6.8.
Project Completion Date : 21-Oct-2021
Project Comment : Product sample received in the week of the 10-May-2021, testing preparation (application) from 11-May-2021. See Test Report No. 227284 (Project Reference PT-3335) for further information.

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. 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

Michael Glasson
APPROVED SIGNATORY



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Summary of Results

APPENDIX/CLAUSE	RESULTS
H – Metals	Passed at an exposure of 15000 mm ² per Litre.
6.8 – Organic Compounds	Passed at an exposure of 15000 mm ² per Litre.

Test Methods

Test(s) in Appendix	AWQC Test Method	Reference Method
H	TIC-006	EPA 200.8

Organic Test Methods

Test(s) in Clause	Test Method	Reference Method
Clause 6.8	TMZ-M36	USEPA524.2
	EP239	USEPA521
	EP132-LL	USEPA_SW846-8270D
	EP075C	USEPA_SW846-8270D
	EP075ASIM	USEPA_SW846-8270D

Summary Comment :

Thirty two sequential soakings were performed to obtain a pH < 9.0. In accordance with section A8 (Cementitious Products). The sample prepared by using 16.5g of water per 100g of ARDEX BR345 and moist cured for 28 days prior to pre-conditioning.



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CLAUSE 6.7

Metals

Sample Description

The sample consisted of repair mortar applied onto two single sided glass plates measuring 75mm x 100mm and providing an approximate surface area of 15000 mm² per Litre. Extracts were prepared using 1000 mL volumes of pre-conditioning water(AI 12.6).

Extraction Temperature

20°C ± 2°C.

Test Method

Metals (Appendix H)

Scaling Factor

Not applied.

Method of Analysis

All methods used to determine concentrations of metals are based on those described in the US EPA method 200.8 Determination of Trace elements in Waters and Wastes by Inductively Coupled Plasma - Mass Spectrometry. The methods have been adapted for the instrumentation in use at the Australian Water Quality Centre.

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	0.024	0.039	0.040	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	0.0273	0.0234	0.0232	0.7
Boron	0.020	<0.020	0.074	0.074	1.4
Cadmium	0.0001	<0.0001	<0.0001	<0.0001	0.002
Chromium	0.0001	0.0001	0.0005	0.0005	0.05
Copper	0.0001	0.1285	0.0944	0.0929	2.0
Iron	0.0005	0.0132	0.0067	0.0064	0.3
Lead	0.0001	0.0005	0.0005	0.0004	0.01
Manganese	0.0001	0.0006	0.0003	0.0003	0.1
Mercury	0.00003	<0.00003	<0.00003	<0.00003	0.001
Molybdenum	0.0001	0.0002	0.0003	0.0003	0.05
Nickel	0.0001	0.0011	0.0013	0.0014	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.

Number of Samples

1.

Test Comment

Not applicable.



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CLAUSE 6.8 Organic Compounds

Sample Description The sample consisted of repair mortar applied onto two single sided glass plates measuring 75 mm x 100mm and providing an approximate surface area of 15000 mm² per Litre. Extracts were prepared using 1000 mL volumes of pre-conditioning water(AI 12.6).

Extraction Temperature 20°C ± 2°C.

Test Method Organic Compounds (Clause 6.8). 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 applied.

Results

Organic Compound

Nitrosamines	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2132829	ES2132829	
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	<0.003	0.1 µg/L
N-Nitrosodi-n-propylamine (NDPA)	<0.003	<0.003	
N-Nitrosomethylethylamine (NMEA)	<0.003	<0.003	

Organic Compound

Phenols	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2132829	ES2132829	
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

Phthalate Esters	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2132829	ES2132829	
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	

Organic Compound

Polycyclic Aromatic Hydrocarbons	Blank µg/L	Test µg/L	Max Allowed
!External Lab Report No.	ES2132829	ES2132829	
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	<0.005	<0.005	
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	Blank µg/L	Test µg/L	Max Allowed
Volatile Organic Compounds GCMS			
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	27	21	60 µg/L
Bromoform	6	5	100 µg/L
Bromomethane	<4	<4	
Carbon tetrachloride	<1	<1	3 µg/L
Chlorobenzene	<1	<1	300 µg/L
Chloroethane	<4	<4	
Chloroform	21	17	400 µg/L
Chloromethane	<4	<4	
cis-1 3-Dichloropropene	<1	<1	
cis-1,2-Dichloroethene	<1	<1	
Dibromochloromethane	28	21	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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Organic Compound	Blank µg/L	Test µg/L	Max Allowed
Volatile Organic Compounds GCMS			
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	82	64	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.

Number of Samples 1.

Test Comment Subcontracted testing conducted by ALS, Environmental Division, NATA accreditation no. 825 site no. 10911 and ALS Scoresby, NATA accreditation no. 992, site no. 989

Qiong Huang

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