

PRODUCT TESTING OVERVIEW

RADCON[®] FORMULA #7

Product: **RADCON[®]
FORMULA #7**
Principal Use: Waterproofing concrete
Manufacturer: Radcrete Pacific Pty. Ltd.

TEST REPORT	CONTENT	DATE	ORIGIN
'Formula #7 Concrete Sealant' Building Officials & Code Administrators, Int'l. Waterproofing Certification Research Report No. 79-12 Masonry & Mortar	Basic Building Code, 1978 Ed. Section 109.0 - Approval Section 872.0 - Waterproofing & Flood proofing	18/6/79	U.S.A.
'Water Permeability Test' Columbia University, City of New York Dept. of Civil Engineers & Engineering Mechanics Lab Test No. 86-46	ASTM E514 Permeation rate 10^{-6} cc/cm ² /sec 72 hour test	26/6/86	U.S.A.
'Chloride Permeability Test' Construction Technology Laboratories Division of Portland Cement Association	6 hour direct current voltage of 3% NaCl solution on concrete with 2 in. cover to reinforcement. Radcon #7 decreases Cl- permeability of a 0.5 w/c ratio to below 0.32 w/c ratio concrete.	9/1/79	U.S.A.
'Tensile Strength Test' Columbia University, City of New York Dept. of Civil Engineers & Engineering Mechanics Lab Test No. 86-46	53.35% increase	31/7/86	U.S.A.
'Bond Strength Test' Columbia University, City of New York Dept. of Civil Engineers & Engineering Mechanics Lab Test No. 86-46	ASTM C952 27.5% increase in bond strength between cementitious materials (Mortar type N - ASTM C270)	26/6/86	U.S.A.
'Low Cost Bridge Deck Surface Treatment' Federal Highway Administration, Washington DC U.S. Dept. of Transportation PB84-238740 Report FHWA/RD-84/001 Tests: Shear adhesion between treated concrete & asphalt Resistance to Water Absorption Scaling Resistance of Treated Concrete - ASTM C672-76 Effect of Placing (160°C) Asphalt on Treated Concrete Effect of Outgassing Chloride ion test - AASHTO T-260 0 - 1 inch depth 1 - 2 inch depth	Test summary: 6 out of 110 products were selected for analysis by USDOT. Test investigated alternatives to membranes for use on bridge decks prior to asphalt topping Results: no significant change 72.2% reduction in weight gain of water no visible scaling after 95 freeze/thaw cycles no affect 90% outgassing 60.4% reduction 94.2% reduction	81-84	U.S.A.
'Exposed Aggregate Test - Water permeation' Columbia University, City of New York Dept. of Civil Engineers & Engineering Mechanics Lab Test No. 85-65	See test report.	20/5/85	U.S.A.
'Water Penetration Test' Israel Standards Institute Concrete Section Report H/150619	Water penetration test under 2 atmospheres of water pressure for a period of 48 hours. Test performed on 3 grades of concrete: B300-40MPa, B200-30MPa & B100-20MPa. One coat - 53% ave. reduction Two coats - 99.58% ave. reduction	29/12/85	Israel
'Verification of Test Report of Radcon Formula #7' The School of Civil Engineering Dept. of Structural Engineering University of New South Wales Assoc. Professor B. Vijaya Rangan	Study into previous testing undertaken on Radcon #7. Results acknowledged.	3/86	Sydney

<p>'Water permeability of Radcon Formula #7' The University of Sydney School of Civil & Mining Engineering H. Roper Professor</p>	<p>Test showed significant reduction in water permeability.</p>	<p>12/4/86</p>	<p>Sydney</p>
<p>'Toxicity & Flammability Certification' Smith Emery Company, LA, California File No. 13827</p>	<p>'not considered toxic to humans...'</p>	<p>18/6/82</p>	<p>U.S.A</p>
<p>'Radcon #7 on Mortar Masonry Joints' Warnock Hersey Professional Services Report 50244-C7-4100-00</p>	<p>Moh's test showed significant increase - 2 point ↑. Windsor Probe Test showed significant increase in compressive strength of mortar.</p>	<p>18/10/88</p>	<p>Canada</p>
<p>'Testing & Evaluation of Radcon #7' Warnock Hersey Professional Services 2.1 Depth of Penetration 2.2 Water Absorption 2.3 Moisture Vapour Permeability 2.4 Chloride Ion Penetration 2.5 Chemical Resistance 2.6 Freeze-Thaw Test in the Presence of Deicing Salt 2.7 Slip Resistance 2.8 Viscosity 2.9 Non-Volatile Contents 2.10 Relative Density 2.11 Ph Value 2.12 Hardness Test - Mohs Scale</p>	<p>15.75mm penetration 41.6% ↓ water absorption % - 1 coat 84.1% vapour permeability see test report see test report 85.5% ↓ in ave. mass loss/sqm - 50 cycles no significant change - see report 0.1172 stoke ASTM D-1644 ~ 27.7% 1.218 g/cm³ 12 1-2 point ↑ on Moh's scale</p>	<p>20/1/89</p>	<p>Canada</p>
<p>'Analysis of Radcon regarding non-toxicity' Australian Nuclear Science & Technology Organisation Lucas Heights, NSW, Australia</p>	<p>Proton Induced X-Ray Emission spectrometry harmful 'elements such as Lead & Cadium were not detected.'</p>	<p>24/4/89</p>	<p>Sydney</p>
<p>'Radcon Formula #7 Concrete Sealer for use in contact with potable water' Singapore Institute of Standards & Industrial Research Report Q-40194-5101-KYP</p>	<p>No affect on taste, odour, colour or turbidity. No toxic metals. Free of cytotoxicity. Does not support microbiological growth. Meets requirement of SS245:1981, App. H</p>	<p>2/3/90</p>	<p>Singapore</p>
<p>'Potable Water Suitability Analysis: Radcon #7' Dept. of Mines, Western Australia Chemistry Centre</p>	<p>BS6920 - Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of water. Meets the standard's requirements.</p>	<p>6/6/91</p>	<p>Perth</p>
<p>'Testing for Calcium Leaching: Radcon #7 vs. Silane' Sydney University Dept. of Agricultural Chemistry & Soil Science</p>	<p>'Radcon #7 exhibited a significant reduce in Calcium leaching in each trial.' Silane increased the amount of Calcium leaching over Radcon #7 and control sample.</p>	<p>13/5/93</p>	<p>Sydney</p>
<p>'Condition Survey of Applications using Radcon #7' University of New South Wales, Sydney Building Research Centre</p>	<p>Report surveyed projects up to 8 years in age, covering high thermal to low thermal stress applications. Problem sites were included to give objective limitations of the products' performance.</p>	<p>8/93</p>	<p>Sydney</p>
<p>'Japanese Test Certification'</p>	<p>Water permeability Penetration Test report in Japanese</p>	<p>25/7/94</p>	<p>Japan</p>
<p>'Resistance to Chloride ion penetration: Radcon #7' University of North Dakota, USA Energy & Environmental Research Centre</p>	<p>AASHTO Designation T260-84 AASHTO Designation T259-80 'Meets the ACI specification of 0.10 wt% for conventionally reinforced concrete in moist environment exposed to chlorides.'</p>	<p>7/94</p>	<p>U.S.A</p>

<p>'Laboratory Evaluation of Radcon Formula #7' Permeability/Absorption/Chloride diffusion ISAT, BS1881 : Part5 : 1970 Water Permeability - Darcy's equation Chloride Diffusion - Fick's equation</p>	See test report	11/94	Sydney
<p>'Determining Depth Penetration: Radcon Formula #7' University of North Dakota Energy & Environmental Research Centre</p>	<p>North Dakota Dept. of Transport specifies a min. of 0.15 inch penetration Radcon #7 penetrated the samples an average of 0.45 inches.</p>	16/3/95	U.S.A
<p>'Maintaining Watertight Seal for a full Thermal Cycle' Radcrete Pacific in house test. This test was undertaken specifically for a top Sydney consultant as part of our product evaluation.</p>	<p>An 8 year old Radcon #7 treated car park was chosen for this test. Water was ponded over a section of a sealed crack for a period of 48+ hours to simulate 2 thermal cycles.</p> <p>No water leakage occurred even with the crack exposed to 2 full thermal cycles, nor did water track along the crack.</p>	18/3/95	Sydney
<p>'ABSAC Approval: Radcon #7' Technical Opinion 193 May 1995 'Purpose: To seal concrete against the ingress of liquid water and contaminants'</p>	<p>'In the opinion of ABSAC, the Radcon Formula #7 is suitable to seal concrete, including cracks, against the ingress of liquid water and contaminants...'</p>	5/95	Sydney
<p>'Effectiveness of Radcon #7 on Carbonated Concrete' University of New South Wales, Sydney Building Research Centre</p>	<p>76.4% reduction in mean permeability of carbonated concrete.</p> <p>Calcium solution required as pre-treatment.</p>	30/5/95	Sydney
<p>'Chloride Ingress due to Salt Water Spraying on Concrete Impregnated with Radcon #7' SINTEF Structures and Concrete Report 70021-3 Fick's law of diffusion</p>	<p>KS 70116</p> <p>'The effective chloride diffusion coefficient for Radcon #7 is about 10 times lower than for the reference concrete,...'</p>	27/6/95	Norway
<p>'Water Permeability of Concrete Impregnated with Radcon #7' SINTEF Structures and Concrete Report 70021-2</p>	<p>Test to 100 (10kg/cm²) & 400 (40kg/cm²) metre pressure head.</p> <p>'The Radcon #7 reduced the water permeability coefficient by about 70% at both water pressures...'</p>	27/6/95	Norway
<p>'Crack Sealing Capabilities of Radcon #7' University of New South Wales Building Research Centre</p>	<p>0.2mm leaking crack sealed with Radcon #7 then exposed to 2 bar water pressure for 60 days.</p> <p>No real leakage occurred.</p>	9/3/95	Sydney
<p>'Crack sealing & re-sealing performance of Radcon #7' University of Bologna, Italy Certificate No. 805</p>	<p>Sealed new cracks up to 0.3mm. With calcium solution sealed new cracks up 1.3mm with no leakage. 58.4% reduction in water absorption.</p>	10/10/95	Italy
<p>'Non Toxicity Verification of Radcon #7' Technologia del Medio Ambiente Laboratorio De Analisis</p>	<p>Radcon #7 meet the non-toxicity requirements in Spain.</p>	07/2/96	Spain
<p>'Study of Corrosion Behaviour in Cracked Sections' University of New South Wales Building Research Centre</p>	<p>ASTM C876-91 - Half Cell Potential Mass loss of reinforcement bar</p> <p>Test on various mix designs, plus Radcon #7 vs. silane with regard to corrosion of concrete in cracks for marine environments.</p> <p>Radcon #7 showed good performance in sealing cracks and inhibiting corrosion. See test report.</p>	6/96	Sydney

'Certificate of Potable Water: Products in Contact with Potable Water' Sydney Water AS4020 Report AWQC 16402.95	Radcon #7 met the requirement of AS4020 for use in waterproofing of potable water holding vessels.	18/9/96	Sydney
'Non-toxicity verification' Ambicentro - Centro Europeu Da Agua E Do Ambiente	Radcon #7 met the requirements for potable water set by Portugal.	17/11/97	Portugal
'Determination of Radcon Formula #7 Penetration Depth' CSIRO, Sydney Building, Construction & Engineering H.Trinh Cao & L. Bucea	Penetration depth measured using: Scanning Electron Microscopy and X-Ray microanalysis. Average penetration: 8.36mm. See test report	12/97	Sydney
'Test of Radcon Formula #7 for use with water intended for human consumption' SETSCO Services Report H8755/EL	BS6920: Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. Radcon #7 met the requirements of BS6920	14/1/98	Singapore

This table briefly lists the majoring tests, and a brief summary on each, that have been completed on Radcon Formula #7 internationally. We encourage you to request specific test reports depending on your specific product requirements. Send your request to:



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