PRODUCT TESTING OVERVIEW

Product: **RADCON® FORMULA #7**
Principal Use: Waterproofing concrete
Exclusive Global Distributor: 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^{o}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
'Water permeability of Radcon Formula #7' The University of Sydney School of Civil & Mining Engineering H. Roper Professor	Test showed significant reduction in water permeability.	12/4/86	Sydney

'Toxicity & Flammability Certification' Smith Emery Company, LA, California File No. 13827	'not considered toxic to humans…'.	18/6/82	U.S.A
'Radcon #7 on Mortar Masonry Joints' Warnock Hersey Professional Services Report 50244-C7-4100-00	Moh's test showed significant increase - 2 point ↑. Windsor Probe Test showed significant increase in compressive strength of mortar.	18/10/88	Canada
'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	 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/cm^3 12 1-2 point ↑ on Moh's scale	20/1/89	Canada
'Analysis of Radcon regarding non-toxicity' Australian Nuclear Science & Technology Organisation Lucas Heights, NSW, Australia	Proton Induced X-Ray Emission spectrometry harmful 'elements such as Lead & Cadium were not detected.'	24/4/89	Sydney
'Radcon Formula #7 Concrete Sealer for use in contact with potable water' Singapore Institute of Standards & Industrial Research Report Q-40194-5101-KYP	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	2/3/90	Singapore
'Potable Water Suitability Analysis: Radcon #7' Dept. of Mines, Western Australia Chemistry Centre	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.	6/6/91	Perth
'Testing for Calcium Leaching: Radcon #7 vs. Silane' Sydney University Dept. of Agricultural Chemistry & Soil Science	'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.	13/5/93	Sydney
'Condition Survey of Applications using Radcon #7' University of New South Wales, Sydney Building Research Centre	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.	8/93	Sydney
'Japanese Test Certification'	Water permeability Penetration Test report in Japanese	25/7/94	Japan
Hyundai Radcon Formula # 7 Certification	Certification from Hyundai for the use of Radcon on their sites		Japan
'Resistance to Chloride ion penetration: Radcon #7' University of North Dakota, USA Energy & Environmental Research Centre	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.'	7/94	U.S.A
'Laboratory Evaluation of Radcon Formula #7' Permeability/Absorption/Chloride diffusion ISAT, BS1881 : Part5 : 1970 Water Permeability - Darcy's equation Chloride Diffusion - Fick's equation	See test report	11/94	Sydney

'Determining Depth Penetration: Radcon Formula #7' University of North Dakota Energy & Environmental Research Centre	North Dakota Dept. of Transport specifies a min. of 0.15 inch penetration Radcon #7 penetrated the samples an average of 0.45 inches.	16/3/95	U.S.A
Herbert Street Test Report - **'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.	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. No water leakage occurred even with the crack exposed to 2 full thermal cycles, nor did water track along the crack.	18/3/95	Sydney
'ABSAC Approval: Radcon #7' Technical Opinion 193 May 1995 'Purpose: To seal concrete against the ingress of liquid water and contaminants'	'In the opinion of ABSAC, the Radcon Formula #7 is suitable to seal concrete, including cracks, against the ingress of liquid water and contaminants…'	5/95	Sydney
'Effectiveness of Radcon #7 on Carbonated Concrete' University of New South Wales, Sydney Building Research Centre	76.4% reduction in mean permeability of carbonated concrete. Calcium solution required as pre-treatment.	30/5/95	Sydney
'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	KS 70116 'The effective chloride diffusion coefficient for Radcon #7 is about 10 times lower than for the reference concrete,…'	27/6/95	Norway
'Water Permeability of Concrete Impregnated with Radcon #7' SINTEF Structures and Concrete Report 70021-2	Test to 100 (10kg/cm^2) & 400 (40kg/cm^2) metre pressure head. 'The Radcon #7 reduced the water permeability coefficient by about 70% at both water pressures…'	27/6/95	Norway
'Crack Sealing Capabilities of Radcon #7' University of New South Wales Building Research Centre	0.2mm leaking crack sealed with Radcon #7 then exposed to 2 bar water pressure for 60 days. No real leakage occurred.	9/3/95	Sydney
'Crack sealing & re-sealing performance of Radcon #7' University of Bologna, Italy Certificate No. 805	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.	10/10/95	Italy
'Non Toxicity Verification of Radcon #7' Technologia del Medio Ambiente Laboratorio De Analisis	Radcon #7 meet the non-toxicity requirements in Spain.	07/2/96	Spain
'Study of Corrosion Behaviour in Cracked Sections' University of New South Wales Building Research Centre	ASTM C876-91 - Half Cell Potential Mass loss of reinforcement bar Test on various mix designs, plus Radcon #7 vs. silane with regard to corrosion of concrete in cracks for marine environments. Radcon #7 showed good performance in sealing cracks and inhibiting corrosion. See test report.	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

CSIRO Investigation of Concrete Cores Report	Investigation by the CSIRO of concrete cores (Hong Kong Highways Dept)	March 1999	Hong Kong
Croatian Language Testing Civil Engineering Institute of Croatia	Radcon Formula # 7 testing conducted by the Civil Engineering Institute of Croatia d.d. Surface adhesion strength Water Permeability Freeze/thaw Resistance to thermal shock And additional tests	21/9/05	Croatia
Croatian Testing Civil Engineering Institute of Croatia	English translation of Radcon Formula #7 testing by Civil Engineering Institute of Croati d.d.. Surface adhesion strength Water Permeability Freeze/thaw Resistance to thermal shock etc And additional tests	21/9/05	Croatia
Hygiene Certificate	Radcon Formula #7 certification for Poland	24/1/07	Poland
Italian Language Surface Treatment Test I Aeronautica Militaire 2 Reparto Operativo Infrastrutture	Field Test on "Hangar North" Area Ciampino Airport To verify the effectiveness of Radcon # 7 against the surface defects of concrete caused by aircraft traffic	28/2/01	Italy
Italian Language Surface Treatment Testing II Aeronautica Militaire Prove e Sperimentazioni	Laboratory Testing for the Italian Air Force, Ciampino Airport To verify the effectiveness of Radcon # 7 against the surface defects of concrete caused by aircraft traffic	15/12/03	Italy
Overview of Surface Treatment Testing II For the Italian Air Force	English language summary of : 1. Laboratory tests 2. Field tests for the Italian Air Force, Ciampino Airport	15/12/03	Italy
Portugese (Brazil) Language Test Report on Potability Brazilian Laboratories – State Department of Health - Instituto Adolfo Lutz	Tests for potability of concrete samples treated with Radcon Formula #7	15/9/05	Brazil
Portugese (Brazil) Language Test Report on Potability Brazilian Laboratories – State Department of Health English Translation	Tests for potability of concrete samples treated with Radcon Formula #7	15/9/05	Brazil
Portugese Language Test Report on Permeability Instituto da Construcao, Porto	Test conducted by Porto University on moisture vapour permeability of concrete samples treated with Radcon Formula #7	7/2000	Portugal
QA Certificate No 1	QA Certificate AS/NZS ISO 9001:2000 Quality Management Systems – Requirements	2000	Sydney
QA Certificate No 2	QA Certificate AS/NZS ISO 9001:2000 ANZSIC Codes: 4523, 4539 for sale and distribution of concrete waterproofing products.	2000	Sydney
Russian Language Certification		17/2/98	Russian
The Virtuous Cycle			

Uni of Sofia Certificate	Evaluation of the technical properties of bio-chemically modified silicate solution Radcon Formula #7 by the laboratory of building materials towards the Department of "Building Materials and Insulation" at the University of Architecture, Building and Geodesy – Sofia.	11/3/03	Sofia

US Roper Vertification Test	Short report on water absorption from Professor Roper of Sydney Univeristy	12/4/86	Sydney
Vietnamese Language Assessment for Radcon Formula #7 Directorate of Standards & Quality, Vietnam	Vietnamese testing for bond strength, asphalt adhesion and water absorption and permeability for Radcon	26/2/03	Vietnam
Vietnamese Language Testing	Radcon # 7 testing in Vietnamese	13/7/05	Vietnam
Kuwait Ministry of Public Works Govt. Centre for Testing & Laboratories	Radcon Formula #7 Test Report by Ministry of Public Works in Kuwait	19/9/07	Kuwait
Bodycote, United Arab Emirates	Radcon # 7 testing for • Comprehensive strength • Water permeability testing • Solids contents	11/5/09	UAE
Institute of Transport, Science & Technology, Vietnam English & Vietnamese Testing	Radcon Formula #7 testing for: • Solids content • Density • Water Absorption • Effect of asphalt at 160 deg C • Depth Penetration • Outgassing • And others	4/5/09	Vietnam
Institute of Transport, Science & Technology, Vietnam English & Vietnamese Testing	Radcon Formula #7 testing for: • Shear Adhesion • Tensile adhesion • Thermal shock resistance a\ • And others	10/6/09	Vietnam

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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