

RADCRETE



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EDITORIAL

With an 8 year record of success in marketing our Radcon #7 waterproofing technology the product continues to gain international recognition based on a proven track record.

As specifiers realise the benefits of the Radcon #7 treatment over traditional membrane systems and admixtures, both in cost and performance the product is finding its way onto sites of international prominence.

Briefly covered in this issue is Radcon #7's largest rooftop to date on one of the five largest shopping centres in the world. Also, covered in the next issue will be the world's third largest telecommunications tower located in Malaysia.

As with any growing organisation we have moved to a larger premises to provide better service to our local and international clientele.

WE HAVE MOVED

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SEACON SQUARE - 50,000m² ROOFTOP

Classic Technologies Co. Ltd., our exclusive distributors for Thailand set new records for Radcon #7 rooftop applications. The Seacon Square development is the largest retail development in Thailand and one of the worlds five largest shopping centres with a gross area of 500,000 square metres!

With the 50,000 square metre rooftop forming part of the 6,000 space car park, Radcon #7 was chosen as the superior waterproofing material that would provide a trouble free system whilst increasing the concrete's durability making it ideal in trafficable areas.

In total, Radcon #7 was applied to 32,000 square metres of trafficable roof deck over all critical retail areas.

The Seacon Square complex includes 2 leading department stores, 500 shops and food outlets, an indoor leisure theme park the size of 12 football fields, a 5000-seat exhibition and sports hall, miniature golf course, ten pin bowling alleys and a 14-screen multiplex cinema.

The direct Australian involvement included PRO 8 as the Project Management Consultant and Lincolne Scott providing Engineering Building Services. The grand opening will be in the second half on 1994.

The full story covering application details and on-site testing requirements will be outlined in our next Newsletter No.19.

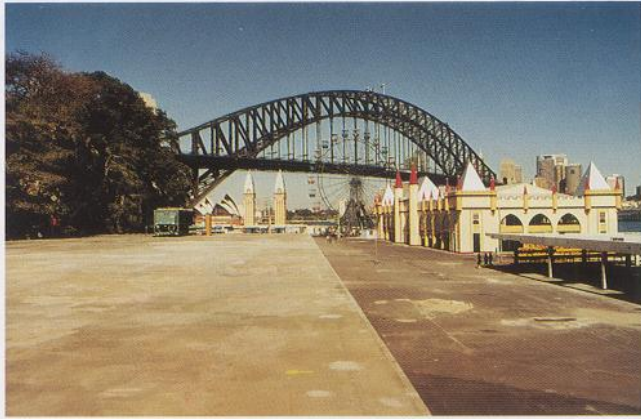
EXCLUSIVE GLOBAL DISTRIBUTOR FOR **RADCON™** FORMULA #7 WATERPROOFING CONCRETE FOR LIFE

RADCON #7 GIVES LUNA PARK A FACE LIFT

With Luna Park Reserve in Sydney opening in early 1995 the area has been undergoing refurbishment of existing structures and building of new structures to blend the best of the old Park with new spectacular rides, amusements, cafes and restaurants.

Taylor Thompson Whiting, the engineers on site utilised Radcon #7 on the existing 1800 square metre concrete structure that supported the old 'Big Dipper' roller coaster.

It was determined that the 13 year old concrete structure, located in a coastal environment, had traces of chloride ion penetration. Faced with the options of re-building the structure or treating with Radcon #7, our product offered the cost-effective solution. The treatment in this application will prevent any further chloride ion ingress and reinstate lost alkalinity.



In preparation for the treatment spalling repairs were completed, foreign materials removed from the structural concrete and the area was water blasted to remove years of airborne pollution.

The application was completed by Conceal Concrete Waterproofing.

FINANCE CENTRE, TAIPEI

The new Finance Centre in busy Taipei was recently waterproofed with Radcon Formula #7. Kingal Trading Corp. in co-operation with Mr Wu Ming-Nan, architects and Lien Hong Co., builders, waterproofed the rooftops and podium deck covering 1,200 square metres.

Mr Simon Chou, Kingal Trading Corp., can be seen here showing some architects what is involved in



preparation for the Radcon #7 application giving them first hand knowledge of the product.

Preparation is a critical factor in successful Radcon #7 applications.

With months of construction work over this podium deck

there was a build up of render and mortar on the structural concrete. This was removed by scabbling and jack hammering as seen in the photograph below.

By involving specifiers in actual site applications and showing them past Radcon #7 treatment they are able to see and gain complete confidence in this unique technology.

Radcrete Pacific encourages you to visit past treated Radcon #7 sites, as clearly on-site performance over time is the true test for any waterproofing product.



ANOTHER ROOFTOP CARPARK FOR RADCON #7

The Whitford Shopping Centre recently constructed by Westfields Design & Construction in Western Australia received a treatment of Radcon #7 to approximately 1,600 square metres of car park deck and plant rooms.

During the curing of the car park deck some minor plastic shrinkage cracks developed, which often occurs particularly with large expanses of concrete. As this car park deck was located over retail space it was decided to use Radcon #7 to ensure no future water leakage problems. Alternatively a membrane would have been required complete with a structural topping slab to make the site trafficable.

By utilising Radcon #7 in this application significant cost savings were realised as no topping or screed is required and the application rate is much faster than comparable systems.

A number of products were researched and it was decided that **Radcon #7 was the most effective product in this type of trafficable situation.** The penetrating treatment increases the hardness of the surface whilst also maintaining a complete water tight seal even in high thermal stress applications.

After the successful application of the rooftop section it was decided to also apply Radcon #7 onto 500 square metres of ramp section.

The application was completed by All Ready



Surfacing and the applicator can be seen in the bottom photo using a motorised spray unit that enables Radcon #7 to be applied at 600 to 800 square metres per hour.

Having now treated car parks in many countries Radcon #7 is the only product proving to be cost effective that is able to withstand the harsh conditions of high traffic and high thermal stresses.

RADCON #7 FOR PORT OF SINGAPORE AUTHORITY

Utilising the latest in warehousing technology, the Port of Singapore Authority recently constructed the Keppel Distripark warehouse utilising Radcon #7 for waterproofing of concrete areas.

Reverton Engineering (S) Pte Ltd, our exclusive representatives in Singapore used Radcon #7 to waterproof the concrete gutters and parapets covering an area of some 2,000 square metres.

This project was completed in March 1994.



MEEKONG RIVER BRIDGE

John Holland Constructions recently completed the construction of the Meekong River Bridge, officially known as the 'Friendship Bridge'. The 1.23km bridge spans the 700 metre wide river between Nung Khai in the north east of Thailand and Tha Naleng in Laos.

The bridge superstructure was built by the balanced cantilever method, due to the difficulty of constructing temporary supports when the river level is high. Each span starts at the pier and progresses in both directions until the cantilevers are joined at the mid-span section. Radcon #7 was treated to the surface and construction joints of this mid-span section which was poured in-situ. There was some 21 mid-span sections in total.

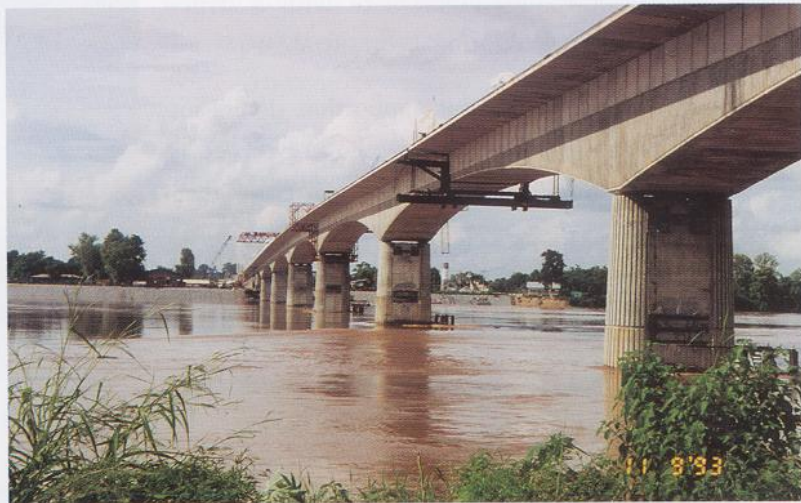
Radcon #7 provided a cost effective alternative to the original membrane specification and was accepted by Maunsell Engineers. John Hollands were happy with the performance of the product particularly taking into consideration the ease of application and unlimited shelf-life of the product in such a remote area.

The bridge will carry two lanes of traf-

fic on a single carriageway and has provision for a future railway down the centre. Because the Lao and Thais drive on different sides of the road there is a traffic change-over on the Lao side.

This is now the second time John Hollands have utilised Radcon #7 in offshore work. The former application being in the construction of an airport hanger in Bangladesh.

Radcrete Pacific, now active in some 25 countries around the world are happy supporting Australian companies remain competitive in the international marketplace.



RADCON #7 IN NAURU

Radcon #7 was chosen to protect the new concrete tank walls formed against the existing walls. The existing tank walls were suffering as a result of chloride ion related corrosion.

The tanks themselves hold sea water for the sanitation needs of the islands inhabitants. In the fore-

ground some of the locals have found another more enjoyable use for an already completed tank.

Given the ease of application and non-toxic nature of Radcon #7 the product is ideal for shipping to remote areas for application by relatively unskilled labour.



UNIVERSITY OF WOLLONGONG CAR PARK

An ideal application for Radcon #7. This multistorey car park at the University of Wollongong developed some plastic settlement cracks on top of the columns of this 'flat bed' designed slab, as depicted in the middle photo.

Allied Constructions were the builders on the site and it was decided, with the assistance of Acer Wargon Chapman Engineers, to treat the 2,100 square metre deck to maintain a permanent watertight seal for the entire area, thus preventing water and pollutants from penetrating to the reinforcement.

After an on-site inspection the car park deck was shot blasted to remove the excess curing compound from the surface to enable Radcon #7 to penetrate into the concrete.

The areas where cracking had occurred were flood sprayed first, then the entire deck and ramp received a complete treatment at an application rate of 1 litre per 4 square metres.

Aside from sealing cracks, the **Radcon #7 will penetrate up to 20mm into the concrete's matrix** significantly increasing the hardness of the penetrated zone. As the treatment has penetrated the concrete's matrix it is not vulnerable to damage from environmental elements or surface abrasion.

In the past, epoxy injection systems would have been proposed for this sort of cracking, but with the natural high thermal stresses on these cracks and lack of elastomeric properties of the epoxy, which continues to harden over time, this treatment can only offer a short term solution.

What often occurs where epoxy is used in high thermal stress repairs is that it does not accommodate thermal movement, thus new cracks occur either parallel to the existing crack or extending either end of the epoxy sealed crack.



Through Radcrete Pacific's export activities, we have not encountered a similar product with performance characteristics equivalent to Radcon #7, particularly in its **ability to maintain a permanent seal on cracks up to 2-3mm in width passing through a concrete slab that are exposed to high thermal stress.**

RADCON #7: AN EASY STEP BY STEP APPROACH

Radcon Formula #7 was applied to the rooftop and storm water holding tank of the new Duty Free Shopping Centre in Guam.

Over 6,000 square metres of concrete areas were waterproofed in less than four days. Fletcher Pacific Constructions were pleased with the speed of application and minimal interference with other trades during the operation which allowed increased site time efficiency.

The Radcrete Sealing System approach is an easy step by step process that has many on site advantages over conventional membrane systems. Some of these advantages are:

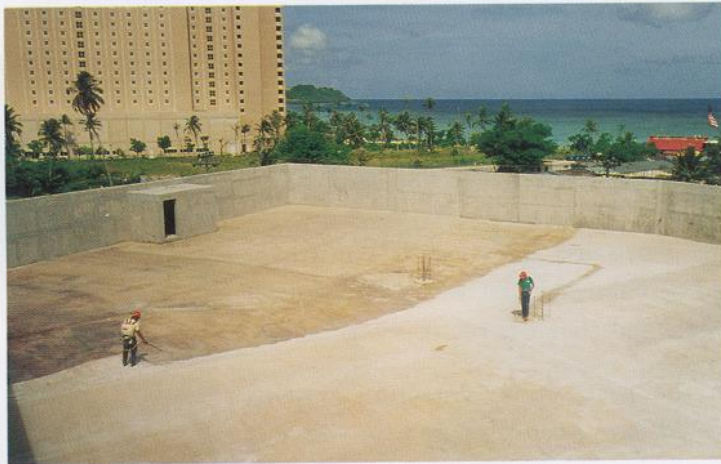
- minimal site interference
- fast application
- only a 2 hour 'window' before risk of rain damage during application in tropical areas in particular
- minimal risk of damage from other trades
- early and easy fault detection
- guaranteed performance and application.

STEP 1: This includes preparation of surfaces and ancillary detailing such as expansion joints, cold joints and penetrations. Before Radcon #7 is applied the concrete surfaces must be at least 28 days old, dust free and dry.

STEP 2: Cracks are flood sprayed ensuring ample material enters the crack and absorbs into the crack walls. Cracks that penetrate the full depth of the slab will show product appearing on the underside as can be seen in the middle picture.

STEP 3: The cracks and slab surface areas received a coat of Radcon #7 at a usual rate of 5 square metres per litre, as depicted in the bottom picture. The areas are marked out by the applicators to ensure correct coverage is maintained.

STEP 4: The treated areas are given a generous watering once the Radcon #7 treated concrete



becomes touch dry again. This watering must be carried out within 6 hours of product application. Step 4 begins the waterproofing action of Radcon #7 as the product reacts with the water and free lime to form a glass hard water repellent gel in the pores, cracks and capillaries deep into the concrete. The watering procedure is repeated the next day and then on the third day the area is ponded to verify that a complete seal has been achieved.

RADCON #7 FOR INDONESIAN SHOP-HOUSES

PT Argacipta Cemerlang, our exclusive distributor for Indonesia applied some 1200 square metres of Radcon #7 to the rooftop and wet areas for this 'Rukan Pintu Air' development.

This style of development constructed by Wilkon Building Contractors is common in Indonesia and enables the occupants to run a small business at street level and have accommodation above.

Due to the success of this application Wilkon and the owner have decided to utilise Radcon #7 for future projects.

In the photo of the rooftop, it can be seen that there is some ponding on the rooftop. This will have no affect on the waterproofing ability of Radcon #7.

A screed with fall lines may still be incorporated over the treatment for hygiene reasons, as **Radcon #7 will still allow for complete adhesion to the substrate.**



SERI DUTA CONDOMINIUMS, KUALA LUMPUR

I & P Fletcher Constructions recently utilised Radcon #7 to approximately 3,000 square metres of the communal pool, surrounding deck and podium areas of this luxury condominium development in Malaysia.

These photos were taken during the application period of Radcon #7 and demonstrate how the product is able to increase site time efficiencies as other trades are able to continue working without fear of damaging the integrity of the waterproofing treatment.

As **Radcon #7 is able to withstand both unlimited hydrostatic pressure and high thermal stresses** only the one product was required for these quite different applications.

Green East Enterprise were the applicators and are developing a strong track record of Radcon #7 applications across Malaysia.



INDIA OPENS ITS DOORS TO RADCON #7

With Radcon Formula #7 developing a strong reputation in SE Asia, surrounding countries are also expressing interest in the products performance. Mr Damian Court, Export Development Manager for Radcrete Pacific is shown here on 8 July 1994 discussing Radcon #7's unique performance after holding a seminar for some 120+ architects and engineers in Bombay.



Roffe Construction Chemicals, a leader in construction chemicals has been nominated as the exclusive representative for Radcon #7 in India and organised this seminar to launch the product into the Indian marketplace.



Mr Court and Mr Raju Shah of Roffe are seen here viewing a complicated layered system that has an inevitably high potential for leakage problems in the future. Alternatively Radcon #7 would have been applied to the structural concrete with no UV protection or fall lines being required.

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