

RADCON[®] FORMULA#7



innovative
concrete sealing

Now also available in Europe!

- Permanently waterproof and durable
- Protection without coating
- Easy and fast application
- Surface fully load-bearing after a short time
- Cost-effective
- Seals cracks up to 2mm on its own
- Active – ongoing reaction in contact with moisture
- Makes the concrete surface as hard as granite
- 100% ecological and sustainable
- Concrete treated with Radcon Formula #7[®] is 100% recyclable
- Resistant to thermal and mechanical influences
- Prevents algae and moss growth on exposed concrete
- Non-toxic



ABOUT RADCON FORMULA #7®

Radcon Formula #7® is a biochemically modified silicate solution that provides long-term waterproofing and durability benefits to concrete. It penetrates into concrete and reacts with free calcium and water to form a calcium silicate gel complex in cracks, pores and capillaries. This gel creates a sub-surface barrier against the ingress of water and contaminants such as chloride ions.

Radcon Formula #7® will seal existing cracks up to 2 mm and ensures in connection with water an ongoing reaction in the concrete. Even later arising cracks are always due to moisture resealed independently. Elaborate and Cost-intensive renovation cycles become years extended.

After using **Radcon Formula #7®** increases the hardness of the top layer of concrete up to 8 Mosh – similar Granite and therefore withstands high loads.

Radcon Formula #7® will applied to the dry concrete surface and as the second step watered. After about 6 hours the surface is fully resistant an can be fully loaded again!

The sealing with **Radcon Formula #7®** accelerates the completion of the construction site.

100% ECOLOGICAL AND SUSTAINABLE

The recipe contains only natural non-toxic Ingredients. As a result, the treated concrete Dismantling no hazardous waste, and can be fully recycled. By reducing construction times in connection with the significantly longer service life of the structures Enormous resources are also saved => that is sustainable and climate-friendly!

Numerous references worldwide prove its effectiveness from **Radcon Formula #7®**

Over 10 million square meters of waterproof concrete and the use of over 3,000 bridges prove the effectiveness.

We guarantee a one-time use effect of 10 years!

PERFORMANCE CHARACTERISTICS

- Permanently seals existing cracks up to 2.00mm.
- Reseals future hairline cracking.
- Reduction of chloride diffusion coefficient by 89% to 3.5 (10,2 m²/s).
- Water permeability reduced by 70% to 5.0 (10,2 m/s) at 10kg/cm²,
- Increases surface hardness from 6 to 8 on Moh's scale.
- Reduces scaling in freeze-thaw environments by 89% at 50 cycles.

- Allows 84.1% moisture vapour permeability.
- Suitable for tanking applications (positive hydrostatic pressure) tested to 400 metres,
- Non Toxic – Certified suitability for potable water.

Radcon Formula #7® and **Radcrete8** are registered Trade Marks of Radcrete Pacific Ply. Ltd

ssi bridge / italy



ITE EDU / singapore



Holendalen railway bridge / Norway



BENEFITS

FAST

The application rate with one motorised spray unit ranges up to 800 sqm per hour. This enables relatively quick product application to fast-track projects.

EASE OF APPLICATION

Although the product requires a level of technical competence, it is easy to apply. At the end of the application this can easily be tested by ponding the treated area.

TRAFFICABLE (AFTER 1ST WATERING)

After the first watering is completed, at approximately 6 hours after product application, the site becomes completely trafficable. This increases site time efficiency and reduces risk of damage from other trades during construction.

OUT-GASSING

In humid environments trapped moisture in concrete often leads to premature delamination of membranes. Alternatively, **Radcon Formula #7[®]** still enables the

concrete to out-gas moisture eliminating this problem. In freeze/thaw environments, **Radcon Formula #7[®]** significantly reduces moisture absorption into the matrix and seals cracks increasing the concrete's durability in this harsh environment. The out-gassing also allows moisture to evaporate out of the concrete reducing freeze-thaw damage.

COMPLETE WATERPROOFING (MATRIX, CRACKS AND FUTURE HAIRLINE CRACKING)

Radcon Formula #7[®] is a complete replacement for a membrane as it waterproofs both the concrete matrix, and cracks even when exposed to high thermal stresses. The penetrated product remains reactive in the presence of water to provide autogenous healing capabilities to future hairline cracking.

NON-TOXIC

Radcon Formula #7[®] is water-based. Equipment can easily be cleaned and the product can be safely handled on-site.

APPLICATION

Radcon Formula #7[®] has a similar viscosity to water thereby enabling easy application. Depending on the type of application that is being undertaken different equipment can be used.

The application equipment ranges from hand sprayers for small/detailed work, to motorised spray units for car parks, bridge decks or airport runways.

CONCRETE MIX DESIGN

Radcon #7[®] will meet or exceed its stated performance when applied to slag blend concrete or ordinary Portland cement type GP concrete; Type „C“ fly-ash replacement up to 30% of cement replacement. Type „F“ fly-ash is NOT suitable for use with **Radcon #7[®]** due to causing pozzolanic reactions in the concrete.

LARGE OR STUBBORN CRACKS

Grind out and flood crack with product. A Calcium solution may be required to bulk up the product in large cracks. Fill with a non-shrink or polymer modified mortar; or revert to an elastomeric sealant if there is a possibility that the crack is „working“ or „volatile“. In large cracks where the product runs through quickly, temporarily use waterproof tape on the underside to pond product in the crack.

CURING COMPOUNDS

Water curing is preferred - minimum 6 days.

OTHER POSSIBLE SUBSTRATES

PVA (Polyvinyl acetate) which biodegrades within 28 days is also suitable. Other materials such as chloro-

rubber, resins, wax emulsions and acrylics are suitable but will have to be removed by grit blasting or chemical wash to allow proper penetration of the product.

LIMITATIONS

Radcon Formula #7[®] is not suitable for sealing working/volatile cracks as a result of structural defects or caused by mechanical damage. (see LARGE OR STUBBORN CRACKS)

The product is not suitable for sealing where segregation and voids are likely such as construction / pour joints. Not suitable around penetrations where there is a masonry / cementitious interface. (See ANCILLARY DETAILING RECOMMENDATIONS)

Radcon Formula #7[®] is not suitable for negative hydrostatic pressure applications such as the inside face of a basement/retaining wall which is constantly wet.

TECHNICAL INFORMATION

UPTURNS/HOBS

An upturn is a raised section of concrete approximately 100mm which is formed as part of the base slab. These in-situ upturns are encouraged where parapet walls or expansion joints are planned to raise the cold joint above the floor level. Fall lines should be incorporated into the slab pour for drainage and elimination of toppings or screeds.

For faster and more effective waterproofing with **Radcon Formula #7**® it is important to take into consideration specific design detailing. These detailing features allow the designer/Builder to optimise the inherent benefits of **Radcon Formula #7**® giving the concrete structure greater durability against the ingress of water and contaminants.

CONSTRUCTION/POUR JOINTS

At these joints, we recommend the use of: a waterstop material such as a PVC-waterstop or a reputable swelling hydrophilic rubber or bentonite clay to alleviate the risk of leakage through potential honeycombing.

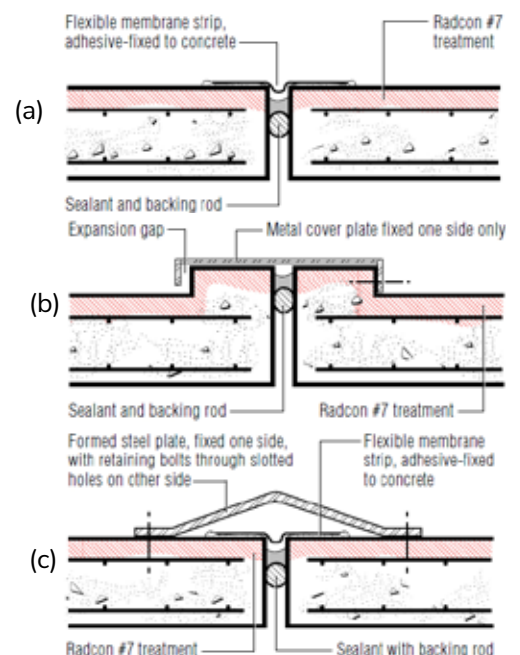
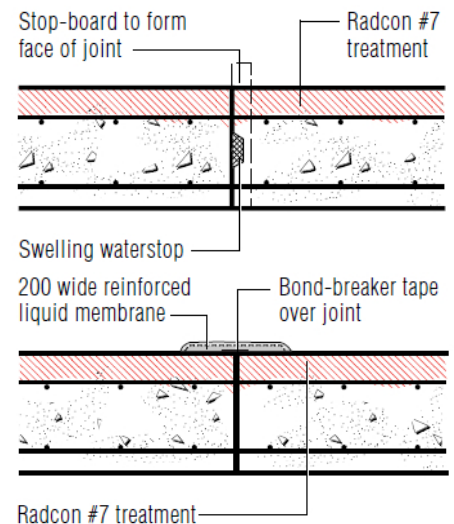
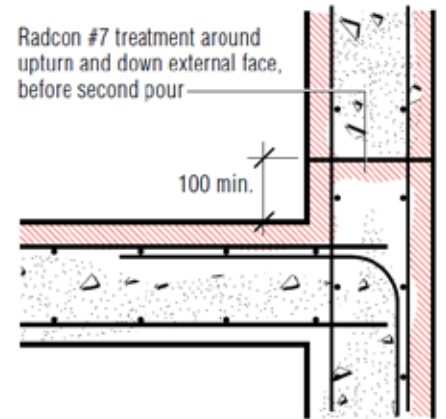
If the slab has already been poured, a reinforced liquid membrane extending 100mm either side of the joint is recommended. Construction joints should be formed vertically with a 'stop board' to ensure good compaction and either side of the joint.

EXPANSION JOINTS

Three expansion joint systems are detailed here:

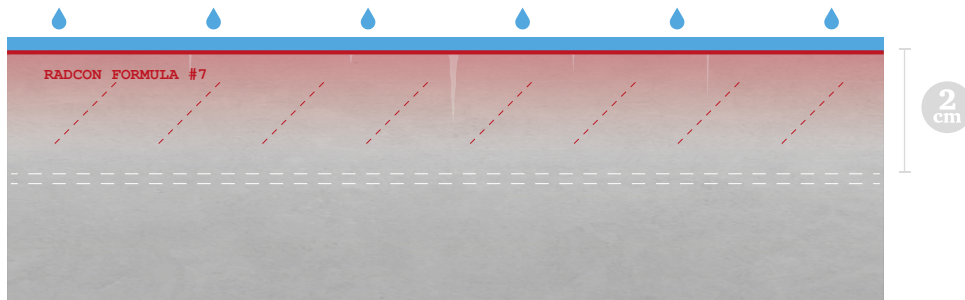
- (a) for low pedestrian trafficable rooftops involving an adhered membrane strip and elastomeric sealant
- (b) for high pedestrian traffic rooftops involving the use of upturns, metal plating and elastomeric sealant, and
- (c) car park environment using system (a) plus a metal speed hump.

All systems involve a dual approach so that if one material fails then the secondary seal will remain in place.



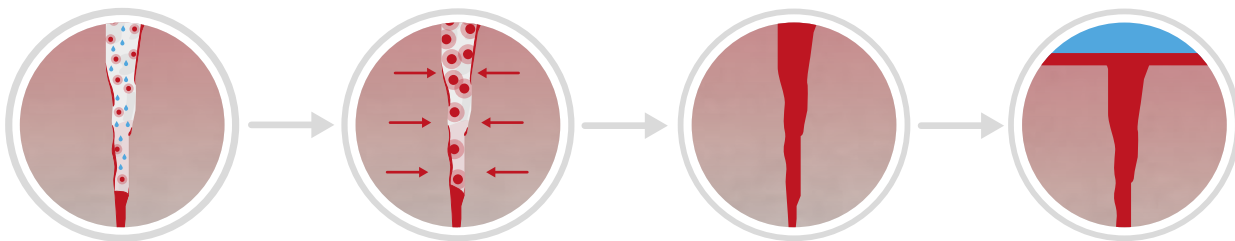
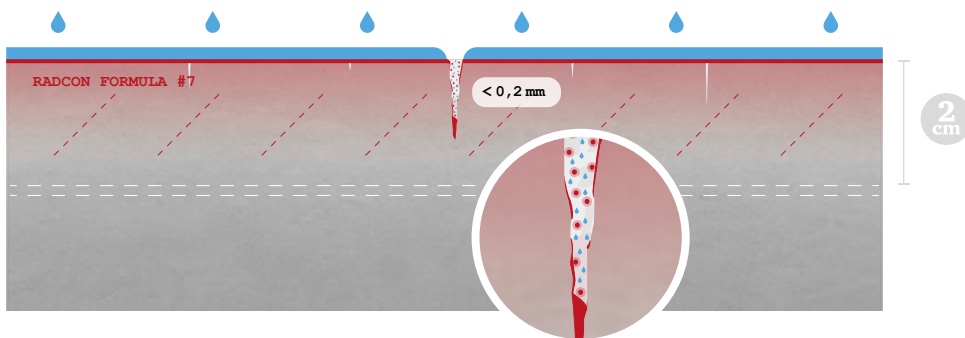
HOW RADCON FORMULA #7[®] WORKS

1. sealed surface



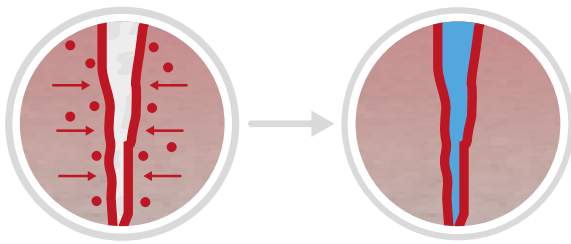
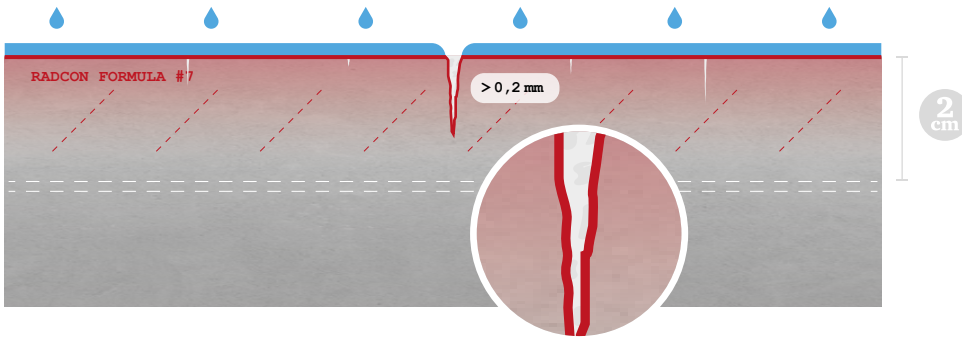
The surface sealed with Radcon Formula #7[®] is 100% waterproof

2. sealed surface in which are hairline cracks have appeared



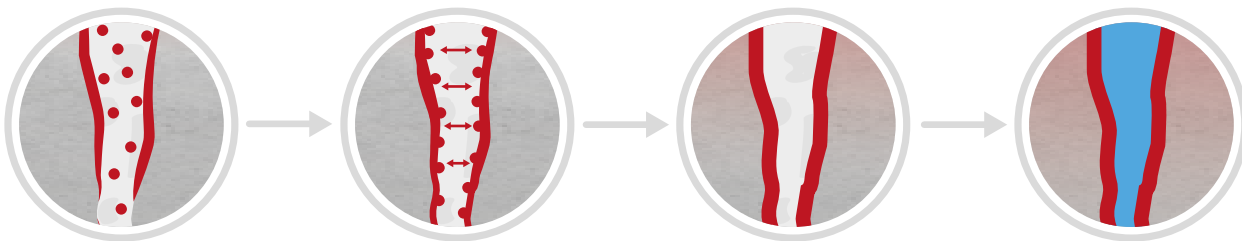
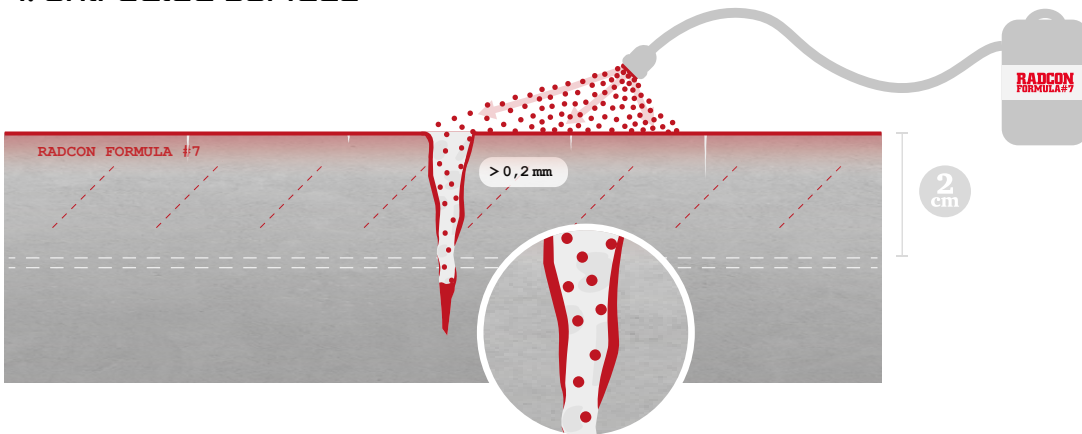
A surface sealed with Radcon Formula #7[®], in which hairline cracks have formed, remains 100% waterproof. The cracks are automatically sealed again by the expansion of Radcon Formula #7[®] itself.

3. sealed surface in which are cracks up to 2 mm have appeared



A surface sealed with Radcon Formula #7[®], in which cracks up to 2 mm wide and up to 2 cm deep have formed, is always 100% waterproof. The cracks remain visible but still waterproof. Over time, these cracks are completely sealed by the expansion of Radcon Formula #7[®].

4. untreated surface



Surfaces that have not yet been treated with Radcon Formula #7[®] and have cracks up to 2 mm wide and depths greater than 2 cm can be completely sealed. Radcon Formula #7[®] penetrates the surface and seals it. The flanks of the cracks are also impregnated by flooding with Radcon Formula #7[®], thus completely sealing them. The cracks remain visible but are 100% waterproof. Over time, these cracks are completely sealed by the expansion of Radcon Formula #7[®].

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