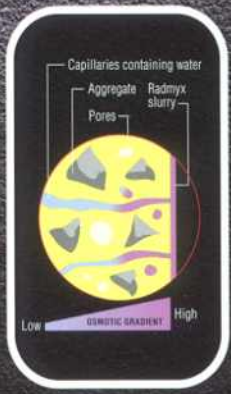


radmyx™

CAPILLARY WATERPROOFING SYSTEM



WATERPROOFING FOR BELOW-GRADE CONCRETE STRUCTURES

PRODUCT DESCRIPTION

Radmyx™ Capillary Waterproofing System is a complete "once-and-for-all" approach to waterproofing below grade concrete structures such as basements, tunnels, culverts and water holding vessels.

Radmyx™ can be used as an admixture, slurry coat, sprinkle or mortar and is effective against positive or negative water pressure.

Radmyx™ reacts with the hydration products of cement to form crystals within the cracks, pores and capillaries of concrete structures – thereby effectively blocking the passage of water.

Complete waterproofing is normally achieved within 5–7 days from application. After the crystallisation process has successfully waterproofed the structure the active chemicals in **Radmyx™** remain dormant in the concrete. Any subsequent contact with water will reactivate the **Radmyx™** sealing process.



KEY BENEFITS



VERSATILE

Radmyx™ can be used as an admixture, slurry, mortar or sprinkle in old or new construction.



SIMPLE

Application is straightforward and effective – and minimal preparation is required.



RELIABLE

Minimises the risk of failure by making concrete watertight – unlike membranes which can delaminate, deteriorate, puncture over time or be damaged by following trades.



CONVENIENT

Back-filling operations can be undertaken immediately after forms are stripped, protection boards and drainage cells are not required as there is no risk of damage during construction or thereafter.



DURABLE

No re-application or future maintenance is required – **Radmyx™** remains reactive in the concrete for the life of the structure and application comes with a 10-year warranty.



EFFICIENT

Quick, simple application streamlines the construction timetable – saving time and money.



SAFE

Radmyx™ is non-toxic, safe for potable water contact and emits no VOCs.

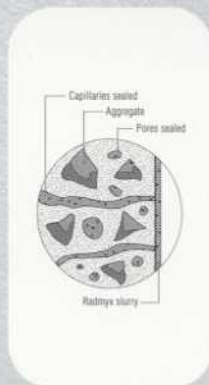
HOW IT WORKS

WHY CONCRETE LEAKS

As concrete cures, it loses most of the water that was added at the batch plant leaving behind small empty spaces known as pores and capillaries. The loss of moisture also causes concrete to shrink that can cause cracking as the concrete is restrained. When subjected to water at some future stage it is these cracks, pores and capillaries that cause concrete to leak – and the gradual deterioration of the structure.

WHAT DOES RADMYX™ DO?

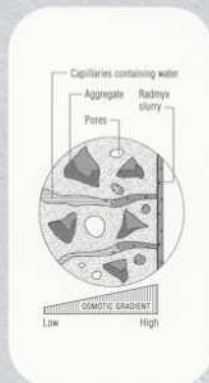
Active chemicals in **Radmyx™** react with the by-products of cement hydration to form insoluble, fibre-like crystals. These crystals fill the cracks, pores and capillaries in the concrete and stop the flow of water and resultant leakage through the concrete.



HOW DOES RADMYX™ DO IT?

It is the process of osmosis that enables the **Radmyx™** crystals to migrate through the concrete. Osmosis is where compounds of higher concentration move through a semi permeable barrier (concrete) to areas of low concentration.

The crystals produced by the reaction of **Radmyx™** move from their highest concentration – i.e. as applied to the surface (slurry) or distributed through the matrix (admixture) – to where they are needed most, that being where the water is present to reactivate and stop the leakage.



CRACK REPAIR DAY ONE



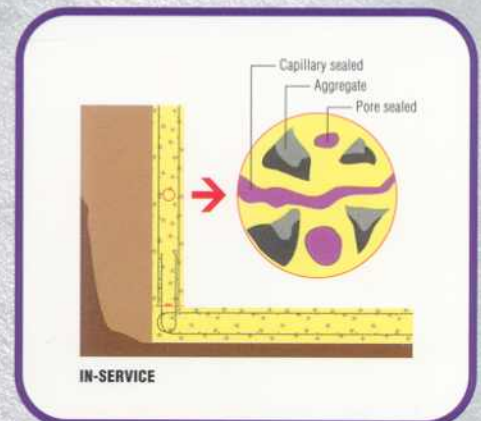
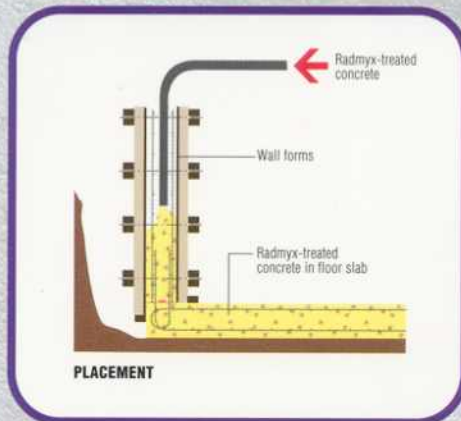
CRACK REPAIR DAY TWO



CRACK REPAIR DAY SEVEN

NEW CONSTRUCTION

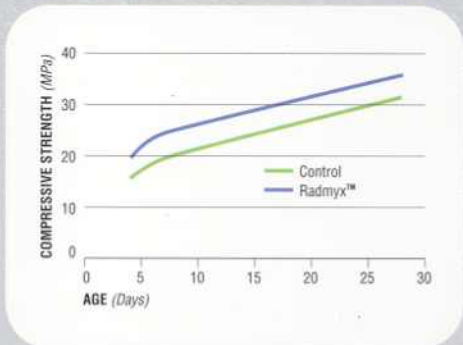
RADMYX AS AN ADMIXTURE



Improved Concrete Properties

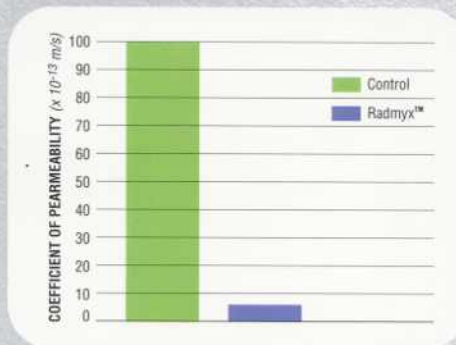
When used as an admixture **Radmyx™** improves the properties of concrete. In a regular 100mm (+/-20mm) slump, 32MPa concrete strength is improved by **17.5%** at 28 days and **shrinkage is reduced by 10.5%** at 56 days. Most other properties remain the same however there is an approximate 2-hour delay in set that should be factored in to the finishing operation.

	Control	Radmyx™ Admix	Improvement
Water-to-Binder ratio	0.51	0.50	same
Initial Setting Time (hr:min)	5:50	7:50	2:00 delay
Final Setting Time (hr:min)	7:20	9:50	2:30 delay
Air Content (%)	1.50	1.50	same
Slump (mm)	100	100	same
Compressive Strength @ 28 days (MPa)	31.5	36	17.50%
Drying Shrinkage @ 56 days (µm)	380	340	10.50%
Water Permeability (m/sec)	9.5x10 ⁻¹²	6.1x10 ⁻¹³	93% reduction



Permeability Reduction

Radmyx™ Admixture delivers a **93% reduction in permeability**. The fact that **Radmyx™** crystals are distributed throughout the whole section realises maximum protection.



Dosage

Radmyx™ powder is added to the batch plant at rate of 1.5% of the binder content. That is Cement + Fly-Ash/Slag to a "TYPE C" ONLY maximum of 6kg per cubic metre.

Applications

Basement walls, floors, lift pits, water holding vessels, tunnels, culverts.

Detailing

Refer to detailing sheets.

Radmyx™ as Dry Shake

Radmyx™ can be used as a dry shake material broadcast on to slabs on ground at 0.8kg per sqm and worked into the surface during the finishing operation by helicopter.

NOTE:

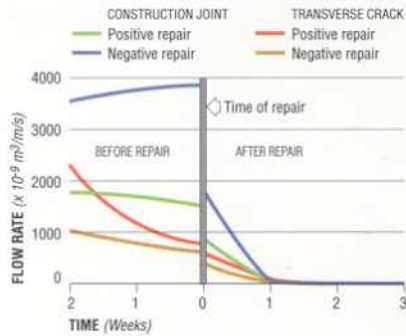
- **Radmyx™** Admixture is only suitable for below ground applications or where there is insulation from thermal stress. **Radmyx™** forms crystals that are rigid in cracks, pores and capillaries. Major cracking and honeycombing will require using **Radmyx™** as a repair material — see next section.
- Concrete mix batches vary from place to place. Always undertake a trial mix to determine initial and final setting times.
- **Radmyx™** is compatible with most other admixtures but trials should be conducted. The use of **Radmyx™** does not cause significant retardation - and if used with a naphthalene or malamine type admixture retardation will be minimal.

REPAIR SYSTEM

RADMYX™ AS A SLURRY OR MORTAR

Radmyx™ can be used to repair cracks, honeycombs, cold joints and general porosity and leakage on either the positive or negative side in below ground applications. It is always preferable to repair on the positive side however, in most instances where this is not possible, repairs on the negative pressure side can be undertaken. By varying the amount of water mixed with Radmyx™ the consistency can be changed from mortar to a slurry.

Performance



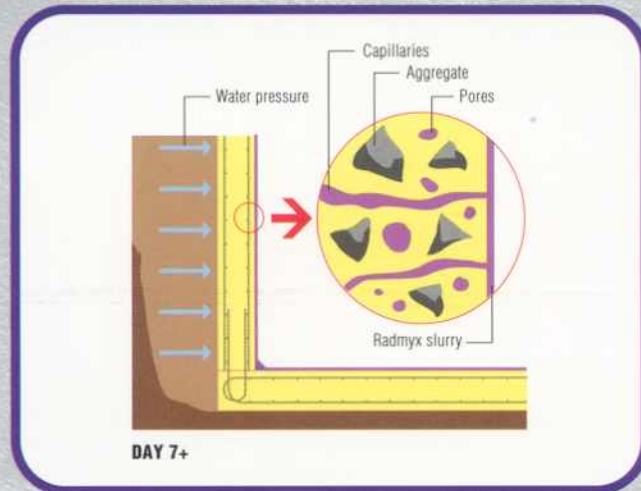
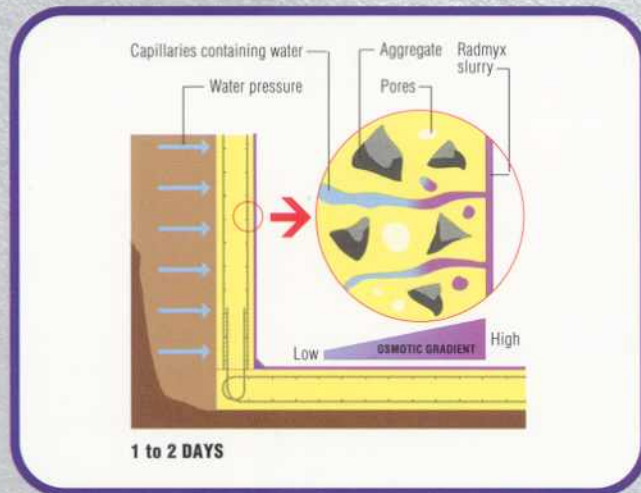
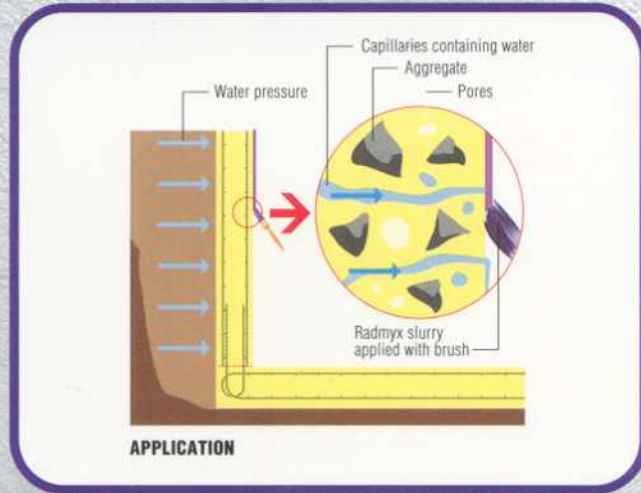
Application Instructions

Refer to Datasheet and detailing sheets.

Sample details	Coefficient of permeability (m/s)
Control	7.17×10^{-11}
Radmyx™ slurry on positive side	3.45×10^{-11}
Radmyx™ slurry on negative side	4.69×10^{-11}

NOTE:

- Repair System is only suitable for below ground applications or where there is insulation from thermal stress — Radmyx™ forms crystals that are rigid in cracks pores and capillaries that cannot accommodate high thermal stressing over the long term.
- All construction joints should contain a Waterstop. Radcrete recommends the use of Volclay RX Waterstop by American Colliod company in all instances.



COLD JOINT REPAIR — BEFORE



COLD JOINT REPAIR — AFTER

*Testing Undertaken by CSIRO Div. Building, Construction & Engineering. For a copy of the actual report contact Radcrete.

TYPICAL APPLICATIONS



FOUNDATIONS



TUNNELS



BASEMENTS



GROUND SLABS



LIFT PITS



WATER HOLDING VESSELS



WASTEWATER STRUCTURES



PYLONS



DAMS

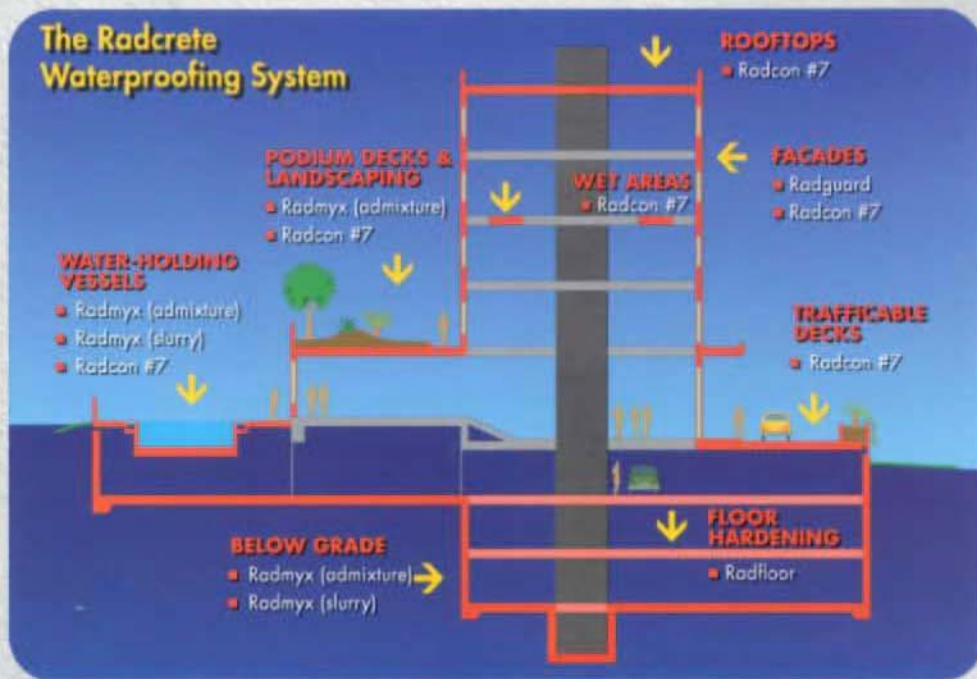


CANALS



RETAINING WALLS

THE RADCRETE WATERPROOFING SYSTEM



The Radcrete philosophy for concrete waterproofing is simple — make the concrete watertight 'for life'.

The silicate-based Radcrete products eliminate the need for membranes and other approaches that have dubious reliability and, often, have an environmental impact.

RADCON[®] FORMULA #7

WATERPROOFING CONCRETE FOR LIFE

Concrete waterproofing for above grade applications. Radcon #7 penetrates into the concrete, reacts with calcium to form a gel that seals cracks, pores and capillaries. Radcon #7 is particularly suited for high

thermal stress areas such as roof decks, car parks, bridge decks, podiums.

radmyx

CAPILLARY WATERPROOFING SYSTEM

Concrete waterproofing for below grade applications. Radmyx forms insoluble, fibre-like crystals in cracks, pores and capillaries that stop the movement of water through concrete. Suitable for use in low thermal stress applications such as below-grade areas and water holding vessels.

RADGUARD[™]

CONCRETE & MASONRY WATER REPELLENT

A water-based silane surface water repellent for concrete, brickwork, blockwork and natural stone walls and facades.

RADEFLOOR[™]

FLOOR HARDENING & DUSTBINDING

A concrete hardening material, ideal for floors, where durability is required without the need for waterproofing.

Further technical information including datasheets, details sheets, specifications, MSDS's is available from Radcrete.

NEAREST REPRESENTATIVE



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