



HYDROC

INNOVATIVE CONCRETE TECHNOLOGY

Concrete Repair, Durability &
Waterproofing Technology



HYDROC
by **NULK**



PIONEERING THE FUTURE OF CONCRETE REPAIR, WATERPROOFING & REINFORCEMENT PROTECTION

Introducing Hydroc, an advanced range of materials that redefines concrete repair, waterproofing and reinforcement protection standards. Our technologically advanced solutions guarantee robust asset preservation, durability, and long-term structural integrity.

INCORPORATING INNOVATIVE TECHNOLOGY

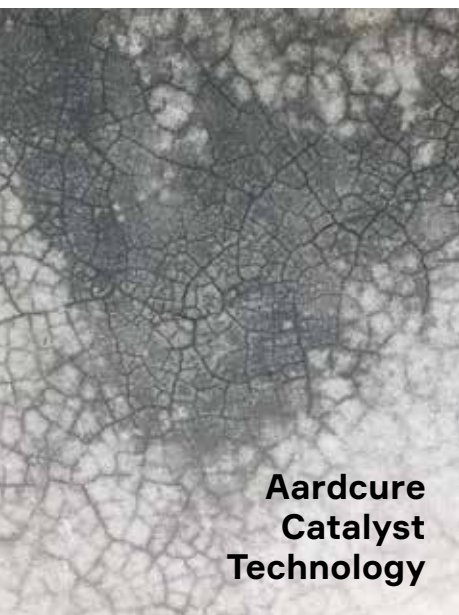
- › Integrated advanced active electrolyte and nano-cement technology has created unique Cementitious and Aqueous coatings.
- › Engineered to provide exceptional waterproofing and surface reinstatement.
- › Effectively restore surfaces with high-strength mortars, enhancing their durability.

UNMATCHED QUALITY THROUGH NANO-CEMENT

- › Hydroc structural repair mortars utilise unique modified nano-cement technology, eliminating the need for acrylic modification.
- › Achieve quality on par with ultra-high-performance concrete for repairs.
- › Form an indivisible bond with existing concrete substrates, ensuring durability for the life of the concrete.

ENHANCED CONCRETE PROPERTIES FOR LONGEVITY & REINFORCEMENT PROTECTION

- › Maximise concrete properties, including density, mechanical strength and chemical resistance with Hydroc.
- › Application of Hydroc products will drastically improve performance and longevity of concrete structures.



**Aardcure
Catalyst
Technology**

SOLUTIONS FOR DEMANDING ENVIRONMENTS

The Hydroc Concrete Repair Product Range offers a comprehensive solution for a wide range of challenging environments where concrete maintenance is crucial. With its versatile applications and superior quality, Hydroc products are technically advanced and durable, ensuring lasting repairs and structural integrity. Key applications for the Hydroc Range:

WATER TREATMENT AND SEWERAGE FACILITIES

Addressing concrete damage in facilities such as water treatment plants and sewerage systems, ensuring the durability of critical infrastructure.

BRIDGES, PIPES AND FACTORY FLOORS

Repairing horizontal surfaces like bridges, pipes, and flooring in manufacturing facilities to maintain safety and operational efficiency.

MARINE STRUCTURES

Providing effective solutions for repair and maintenance of concrete structures exposed to harsh marine environments.

WALLS, COOLING TOWERS AND CHIMNEYS

Offering durable repair options for vertical surfaces such as walls, cooling towers and chimneys.

TUNNELS, PIPES AND BELOW GROUND STRUCTURES

Ensuring the structural integrity and waterproofing of below-ground structures in challenging ground conditions, including tunnels, pipes and outfalls.

ROADWAYS AND INFRASTRUCTURE

Addressing concrete deterioration on roadways and other critical infrastructure, enhancing safety and longevity.

WAREHOUSING

Offering solutions for maintaining concrete surfaces in warehousing environments, where durability is essential.

**WATER
TREATMENT
& SEWAGE
PLANTS**



**SWIMMING
POOLS**



**ROOF
DECKS**



**WATER
TOWERS &
RESERVOIRS**



**UNDER-
GROUND
TUNNELS**



**BASEMENTS
&
FOUNDATIONS**



**BRIDGE
PYLONS,
BEAMS &
DECKS**



**MARINE
STRUCTURES**



**CHEMICAL &
FERTILIZER
PLANTS**



**BELOW-
GROUND
CAR PARKS**



THE CATALYST TECHNOLOGY ADVANTAGE: MAXIMISING THE POTENTIAL OF CONCRETE

How does Catalyst technology work?

VULK's Aardcure Catalyst technology maximises the potential of concrete to significantly improve concrete durability. Aardcure Catalyst Technology is incorporated within the specific Hydroc repair solutions to provide the ultimate properties to new and existing concrete structures.

- › Contains an active electrolyte that creates the environment to start growing new cementitious formations and increase the mass of concrete itself
- › Redissolves the soluble and partially soluble cement crystals and allows it to totally reform again in additional formations
- › Grows new formations in the macro pores which can close shrinkage cracks with new cementitious growth
- › Brings forward the self-healing properties of concrete that occurs over decades

- › Creates a concrete surface that is denser to provide absolute protection of structures from demanding environmental conditions
- › Incorporated within cementitious repair mortars (Reinstate / Render) to form a permanent indivisible bond with concrete substrates.

SUSTAINABLE SOLUTIONS: EXTENDING LIFESPAN AND REDUCING CARBON FOOTPRINT

Reduce the overall carbon footprint in concrete construction with solutions to protect, repair and extend the lifespan of new and damaged existing structures' with high performance reinstatement methods.

HYDROC H3 CATALYST / REINSTATE REPAIR METHOD



Breathe life back into concrete structures

Featuring Hydroc H3 Catalyst penetrating liquid and Hydroc Reinstate repair mortar, VULK have developed an innovative method for the reinstatement of substandard new, deteriorated existing concrete surfaces, or defective low cover structures.

With high mechanical and chemical resistance, this trafficable system permanently reinstates and protects surfaces with the same performance outcomes found in high performance concrete, extending the life of concrete and saving structures from removal.

Follow this simple system:

1. Surface preparation
2. Spray application of Hydroc H3 Catalyst
3. Apply slurry coat of Hydroc Reinstate
4. Finish with a trowel machine

The new surface can tolerate light traffic after 24 hours and has the strength of 52mpa after 28 days.

HYDROC H3 CATALYST

Durability and Waterproofing Enhancer

A cutting-edge enhancer with crack mitigation technology, Hydroc H3 Catalyst penetrates deep into surfaces and voids, promoting new cementitious growth in pores and cracks, increasing abrasion resistance, passivating reinforcement, and reducing permeability to water and chemicals.

- › Concentrated formulation for treatment of deteriorated concrete
- › Treatment of micro and macro shrinkage cracks, up to 0.3mm wide
- › Primer for Hydroc waterproofing and repair mortars
- › Increases impermeability and chemical resistance
- › Increases concrete surface hardness and abrasion resistance of structures such as floors, roads, bridge decks etc.
- › Mitigates early-stage shrinkage and surface cracking in fresh concrete
- › Effectively eliminates surface dusting
- › Increases concrete's resistance to steel reinforcement corrosion
- › Reduces moisture vapour transmission and hydrostatic pressure from positive and negative sides

HYDROC REINSTATE

Advanced Cementitious Topping

A fine, brushable and trowellable cementitious topping featuring highly concentrated Catalyst penetrative technology. Tailored for repair, reinstatement, waterproofing and corrosion inhibition, it is effective on horizontal, vertical and overhead concrete surfaces.

- › Achieves single-layer thickness of 0.5mm - 1.5mm
- › Creates an indivisible bond with concrete substrates
- › Enhances protection against steel reinforcement corrosion
- › Greatly improves concrete impermeability
- › Applicable on both positive and negative sides of concrete structures
- › Withstands extreme hydrostatic pressure from positive or negative surfaces
- › Effectively seals hairline cracks up to 0.5mm
- › Substantially reduces penetration of chlorides
- › Allows concrete to breathe
- › Application possible on damp surfaces
- › Suitable for resurfacing trafficable horizontal surfaces



HYDROC RENDER

Cementitious Topping and Repair Render

A high-performance cementitious coating and repair render formulated for 1.5-5mm applications, unique Catalyst penetrative technology, designed to effectively restore, waterproof, and inhibit corrosion on horizontal, vertical and overhead concrete surfaces.

- › Suitable for applications at 1.5-5mm thickness
- › Creates an indivisible bond with concrete substrates
- › Enhances protection against steel reinforcement corrosion
- › Substantially improves concrete impermeability
- › Applicable on vertical, horizontal and overhead surfaces
- › Suitable for both positive and negative sides of concrete structures
- › Resistant to extreme hydrostatic pressure from positive or negative concrete surfaces
- › Capable of sealing hairline cracks up to 0.5mm
- › Substantially reduces penetration of chlorides
- › Allows concrete to breathe
- › Application possible on damp surfaces

HYDROC CEMPATCH

High Build, Fibre Reinforced Repair Compound

A high performance, thixotropic repair compound featuring fibre reinforcement, offering high strength, chemical resistance and impermeability. This versatile compound effectively restores damaged or spalling vertical, overhead and horizontal concrete surfaces.

- › Accommodates 5-50mm thickness in a single layer application
- › Boasts high mechanical strength properties
- › Creates a seamless integration with the underlying concrete
- › Provides exceptional waterproofing and impermeability
- › Resistant to sulphates and compensates for shrinkage
- › Enhances concrete impermeability
- › Safeguards against reinforcement corrosion
- › Exhibits superb abrasion resistance and durability

HYDROC MICRO CONCRETE

Non-Shrink, Self-Leveling Structural Micro-Concrete

A versatile, non-shrink, self-leveling micro-concrete (grout) that combines Portland cement, graded silica sands, flow-enhancing compounds, and a shrinkage-compensating system. This exceptional micro-concrete is ideal for structural applications.

- › Suited for pour and form applications
- › Exhibits excellent flowability and workability
- › Resistant to sulphates
- › Compensates for shrinkage
- › Achieves high early and ultimate strengths
- › Demonstrates remarkable waterproofing and impermeability
- › Free from added chlorides
- › Offers superb abrasion resistance and durability
- › Highly resilient against freeze/thaw cycles, carbonation, and sulphates
- › Suitable for vertical, horizontal and overhead applications
- › Applicable in enclosed or open environments, whether wet or dry conditions

HYDROC HIGH BUILD MORTAR

High Build, Chemical-Resistant Repair Compound

A robust, chemical-resistant repair compound designed for high build applications. This compound ensures exceptional strength and impermeability when used to repair and restore damaged or spalling horizontal concrete surfaces.

- › Allows application at up to 100mm thickness in a single pour
- › Offers high mechanical strength properties
- › Enhances concrete impermeability and corrosion resistance
- › Safeguards against reinforcement corrosion
- › Demonstrates excellent abrasion resistance and durability
- › Compatible with aftertrades
- › Suitable for top coating with Hydroc Reinstat and Hydroc Render

HYDROC PLUG

Fast Setting Cementitious Plugging Mortar

A high-performance, fast-setting cementitious plugging mortar designed for efficient sealing of cracks and construction joints. This single-component solution provides a permanent and reliable barrier against water seepage and pressure leaks.

- › Boasts high water-stopping power and hydraulic resistance
- › Effectively halts water flow and leakage
- › Sets rapidly, achieving quick strength development
- › Demonstrates strong adhesion to repaired surfaces
- › Offers fast and easy application process
- › Versatile application options: mix with water or use as a dry powder
- › Provides a lasting and durable repair solution



PRODUCT SELECTION

	HYDROC H3 CATALYST	HYDROC REINSTATE	HYDROC RENDER	HYDROC CEMPATCH	HYDROC MICRO CONCRETE	HYDROC HIGH BUILD MORTAR	HYDROC PLUG
DESCRIPTION	Concentrated penetrating durability and waterproofing enhancer with crack mitigation technology	Fine, brushable, and trowellable cementitious coating featuring highly concentrated Catalyst penetrative technology.	Performance cementitious coating and repair render, featuring Catalyst penetrative technology.	High Build, Fibre Reinforced Repair Compound	Non-Shrink, Self-Leveling Structural Micro-Concrete	High Build, Chemical-Resistant Repair Compound	Fast Setting Cementitious Plugging Mortar
APPLICATIONS OVERVIEW	Penetrative durability enhancer and micro crack repair treatment, which serves as a primer for Hydroc cementitious repair mortars, delivering exceptional adhesion and durability.	Fine build repair, reinstatement, waterproofing, and corrosion inhibition of all concrete surfaces that is trafficable and resists positive and negative water pressure.	Medium build repair, reinstatement, waterproofing, and corrosion inhibition of all concrete surfaces.	Versatile compound for filling damaged or spalling vertical, overhead, & horizontal concrete surfaces.	Structural pour and form applications requiring high strength and low shrinkage.	Repair compound for deep infill of damaged or spalling horizontal surfaces	Plugging mortar for efficient sealing of cracks and construction joints
USAGE / SITUATION	Horizontal/ Vertical/ Overhead	Horizontal/ Vertical/ Overhead	Horizontal/ Vertical/ Overhead	Horizontal/ Vertical/ Overhead	Horizontal/ Vertical/ Overhead	Horizontal	Horizontal/ Vertical/ Overhead
BUILD PER COAT	Penetrating	0.5-1.5mm	1.5mm-5mm	5-50mm	20-200mm	100mm	N/A
APPLICATION METHODS	Spray	Brush / Hand or Power Trowel	Trowel	Trowel	Trowel	Pump / Pour / Trowel	Gloved Hand, Trowel, Wet Spray
YIELD	1L /3-5m ²	10.5 litres per 20kg bag	10 litres per 20kg bag	10 litres per 20kg bag	10 litres per 20kg bag	10 litres per 20kg bag	N/A
PACKAGE SIZE	20L, 1000L IBC	20Kg	20Kg	20Kg	20Kg	20Kg	15Kg
COMPRESSIVE STRENGTH - 28 DAYS (MPA)	N/A	52.5	43.5	55.4	55	54	36.4
FLEXURAL STRENGTH 28 DAYS (MPA)	N/A	8.2	5.5	6.6	N/A	5.9	7.7

VULK:

THE LEADERS IN CONCRETE DURABILITY



Tier-1 companies and other industry leaders trust VULK for their commitment to quality, innovative solutions, and dependable products for all concrete construction elements.

VULK Pty Ltd, with over two decades of comprehensive contracting expertise, trusted advisors to architects, engineers, builders and civil contractors in realising their project visions.

Originating from large-scale projects, VULK manufactures and provides tried and trusted materials and systems.

Renowned for innovative concrete protection, repair, and decorative treatments, VULK stands as a preferred choice in both the commercial building industry and residential sectors, delivering the best products for perfect concreting results.

We exist to help you turn your vision into reality, achieve a high-performance finish and ensure the longevity of your client's investment. Contact us today for assistance with your specification or next project.

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Concrete Curing



FINDURO

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Polished Concrete

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