

The Multiguard In-depth is Different!

Multichem In-depth Crystalline Technologies are hydrophilic, water is used in the process of crystalline development.

Silicates/Stearates based products are hydrophobic in nature and function by repelling water. Water is not used as part of the process of crystalline development.

Multiguard In-depth Crystalline Technologies work on catalytic reaction. They create a reaction between the water and the unhydrated cement particles in the concrete.

Silicates/Stearates based technologies are reactive. The silicates/stearates react to the free lime in the concrete filling the initial pores and capillaries only.

Multiguard In-depth Crystalline Technologies improve with age. The enhanced hydration effects combined with the catalytic nature of the technology result in an application that only gets better over time.

Silicates/Stearates based technologies are the best they will ever be shortly after application and will continuously deteriorate with age.

CRYSTALLINE WATERPROOFING



Permanent Waterproofing Solutions



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 Creating long lasting solutions





HydroNil International is a premier manufacturer of crystalline waterproofing products for use in concrete, concrete blocks and other cement based products. The principals at HydroNil have been at forefront of this revolutionary technology called MICT (Multiguard In-depth Crystalline Technology) for more than one decade. Multigard In-depth are product line truly crystalline products working deep within the concrete to create permanent protection of structure from water, water bond chemicals and in-depth corrosion.

fig 1



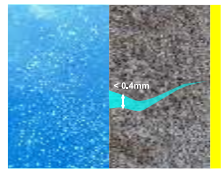
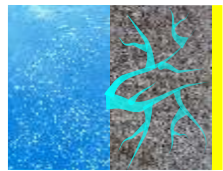
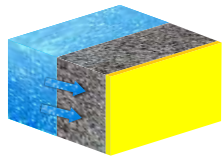
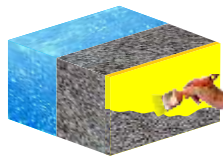
Multiguard In-depth crystals formed by catalytic reaction between water and cement particles.

Multiguard In-depth

...Waterproofs Concrete In-depth

Multiguard In-depth is a state-of-the-art, single component system designed to waterproof and protect concrete permanently in-depth. Specifically designed to function as a one time treatment for the life of the concrete, Multiguard In-depth penetrates into the concrete to create a catalytic reaction between unhydrated cement particles and moisture. The reaction that occurs causes millions of long pin like crystals (Fig 1.) to form within the pores and capillaries of the concrete effectively stopping water penetration through enhanced hydration. Because of the catalytic nature of HydroNil's MICT technology, the ability to generate this reaction is continuously present, should water or moisture become present at a future date, the process will reactivate stopping all future water penetration.

Multiguard In-depth not only provides an effective long term solution for waterproofing concrete, it also works effectively to enhance the autogenous healing capabilities of concrete. HydroNil's catalytic enhancement of the hydration process assist the concrete's natural process of autogenous healing in the presence of moisture resulting in enhanced self healing capabilities. Unlike silicate based technologies, Multiguard In-depth does not react with the free lime in the concrete and is always present to stimulate re-hydration of the cement particles whenever water becomes present.



Process

Multiguard In-depth Surface Applications Penetrates Deep Into The Concrete

- A) Multiguard In-depth surface application technologies penetrate deep into the pores and capillaries to effectively waterproof concrete permanently. This allows application from both positive or negative sides.
- B) The process of crsyalline development will continue deepinto the concrete stopping water and filling the pores and capillaries with enhanced crsytal growth

Mutiguard In-depth Fills Pores and Capillaries Stopping Water Ingress Permanently

- C) Multiguard In-depth technology work as a catalyst to create a reaction between the unhydrated cement particles in the concrete and any moisture that may be present (or become present in the future) causing the concrete to further hydrate.
- D) The enhanced hydration promoted by the catalytic reactionresults in additional calcium silicate hydrate crystals being formed within the concrete pores, capillaries and even the micro-crack within the concrete. The catalytic nature of the technology results in an ability to be constantly present within the concrete even years later.

Multiguard In-depth Self-Heals Cracking

- E) It is this enhanced hydration process that allows Multiguard In-depth the unique ability to autogenously healing cracks within the concrete.
- F) Upon the presence of water, even after many years, the catalytic abilities of Multiguard In-depth products promote a further reaction between unhydrated cement particles and water to create further hydration and effectively seal cracks.
- G) The process will continue until the enhanced crystal growth has stopped the ingress of water into the crack.



Products

Multiguard In-depth Premix (MIP)

MIP uses HydroNil's unique waterproofing crystalline technology as an admixture. It is specifically designed to reduce shrinkage cracks, while increasing concrete 's durability through enhanced hydration. Not only does MIP provide a cost effective alternative to membrane systems, it provides dramatically increased autogenous healing to concrete even years after the application. Projects that use MIP show consistent increase in productivity, while reducing labour and material cost. MIP may be added at the batch plant or directly to the ready mix trucks.

Dosage: 2% of cement content or 6kg per m³ of concrete

Multiguard In-depth Mortar (MIM)

MIM is a fast setting, very dense cement grout that utilizes HydroNil's unique waterproofing technology together with a fast setting high strength property to provide an effective system for establishing a barrier between concrete or masonry and the surface coating. MIM is especially formulated to reduce cracking and can withstand high hydrostatic pressures while locking on to the substrate. This makes it an excellent product for use as a protective barrier coating and repairing damaged areas in concrete and masonry. It is available in 5 and 25 kg bag.

Multiguard In-depth PlugFast

PlugFast is non-shrinking grout formulated to immediately stop flowing water through concrete cracks and holes in seconds. Using an advanced formulation based on HydroNil's unique waterproofing crystalline technology, PlugFast hardens in excess of the concrete strength into which it has been placed to ensure repairs stay permanently where they are placed.



Multiguard In-depth

Recommended Areas

Multiguard In-depth may be used on all new and old structurally sound concrete surfaces.

Typical areas of application are

- Below grade waterproofing
- Manholes
- Elevators and maintenance pits
- Tunnels and subway systems
- Sewage and waste water treatment plants
- Reservoirs and potable water tanks
- Bridge decks
- Swimming pools, marine aquarium
- Parking slabs and driveways
- Concrete walls, floors, patios
- Rooftops
- Dry vaults
- Pipes

Features

Multiguard In-depth

- Is a one time application that waterproofs for the life of the concrete
- Is user friendly and easy to apply
- Is permanent for the life of the concrete
- Is applied from either the positive or negative side of concrete slab or directly added to green concrete.

Waste water treatment facility in Slovakia used Multiguard In-depth to provide permanent waterproofing protection.



Multiguard In-depth

Advantage

Multiguard In-depth

- Will autogenously repair concrete
- Will reactivate the waterproofing mechanism should water be present in the future
- Will increase the durability of the concrete
- Will protect against cracking and spalling
- Will stop water penetration into the concrete
- Will provide the best quality to cost ratio in the industry
- Will eliminate the need for any other waterproofing system

Benefits

Multiguard In-depth imparts

- Protection of reinforcing steel against chemical attack
- Protection against deterioration of the concrete due to waterborne chemical attack
- Protection against deterioration of the concrete due to AAR/ASR
- Protection against deterioration of the concrete due to cast in contaminants
- Protection against deterioration of the concrete due to carbonization
- Protection against heavy hydrostatic pressure
- Protection against water penetration through micro-cracks by autogenously healing all future micro-cracking
- Protection against deterioration due to freeze/thaw environments



Products

Multiguard In-depth Type A (MITA)

MITA is a state-of-the-art premium single component surface applied crystalline waterproofing product. It may be applied as a slurry, sprayed on or as a dry shake to either positive or negative side of new or existing concrete structures. This unique, highly concentrated product will penetrate deep into the concrete to provide waterproofing protection even under the most demanding hydrostatic conditions.

Coverage: 0.80kg/m² when used with Multiguard In-depth Type B
1.00kg/ m² when used alone or for dry shake broadcast.

Multiguard In-depth Type B (MITB)

MITB uses a concentrated version of HydroNil's advanced catalytic technology to provide a cost effective solution for permanent dampproofing and in-depth waterproofing solutions. It may be used as a cost effective second coat for MITA applications or as a single coat solution for less demanding applications. MITB is applied as a brush on slurry or applied as a dry shake broadcast.

Coverage: 0.8 kg/m² when used as second coat over MITA
1.0 kg/m² when used alone or for dry shake broadcast.