



Crystal Krete™

By ICM TECHNOLOGY (THAILAND) CO., LTD.



FACT

- Quality Concrete starts with **QUALITY CEMENT** and a good **MIX DESIGN**

BUT

- Even with Quality Concrete, it is not uncommon for hairline cracks to occur

CRYSTAL KRETE™

- is a non-toxic, crystalline integral waterproofing concrete that provides structures with self-healing properties and the ability to reseal hairline cracks (up to 0.6mm) that develop during the lifetime of the concrete.

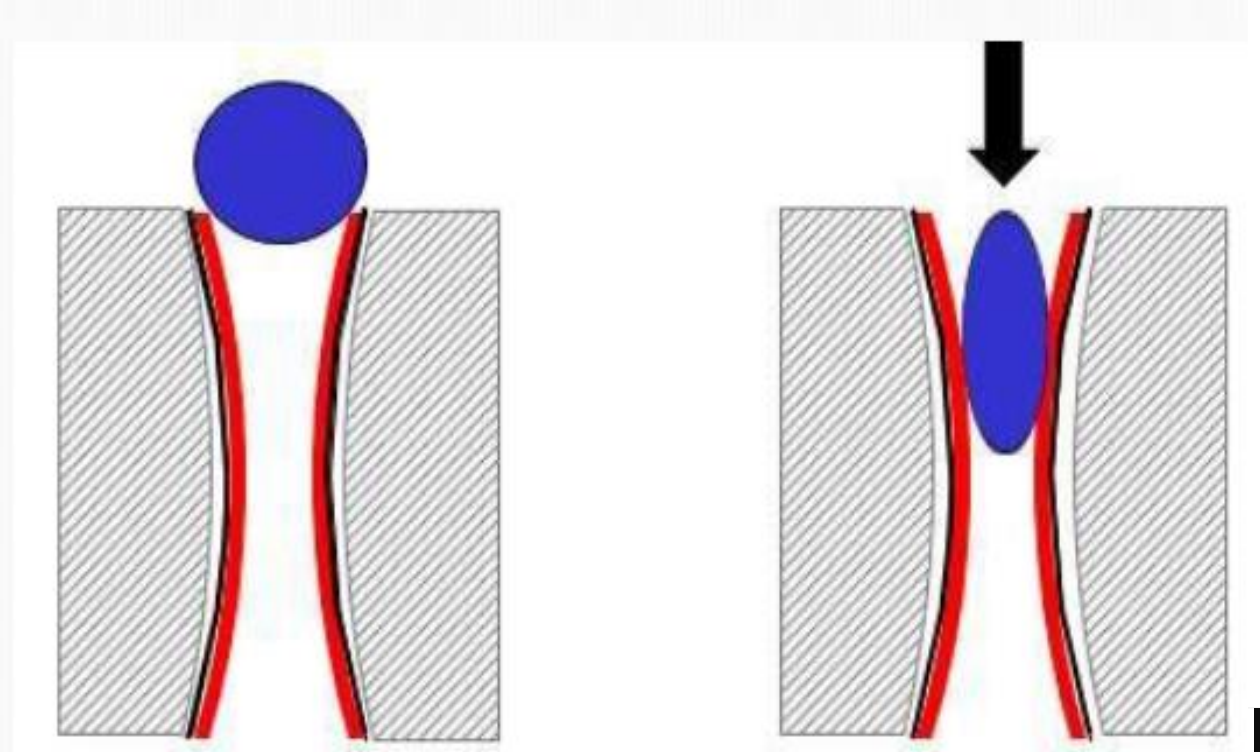
What is **Crystal Krete™**?

Self-healing Integral Waterproofing
Concrete

HYDROPHOBIC V/S HYDROPHILIC CRYSTALLINE SYSTEMS

During concrete formation tiny holes and capillaries have been created that make concrete porous which allows water (and other liquids) to penetrate into the capillary structure

Hydrophobic products causes increased surface tension and thereby repel the water from the surface but under high hydro-static water pressure, these chemicals often fails and water penetrates through the voids and capillaries





CRYSTAL KRETE™

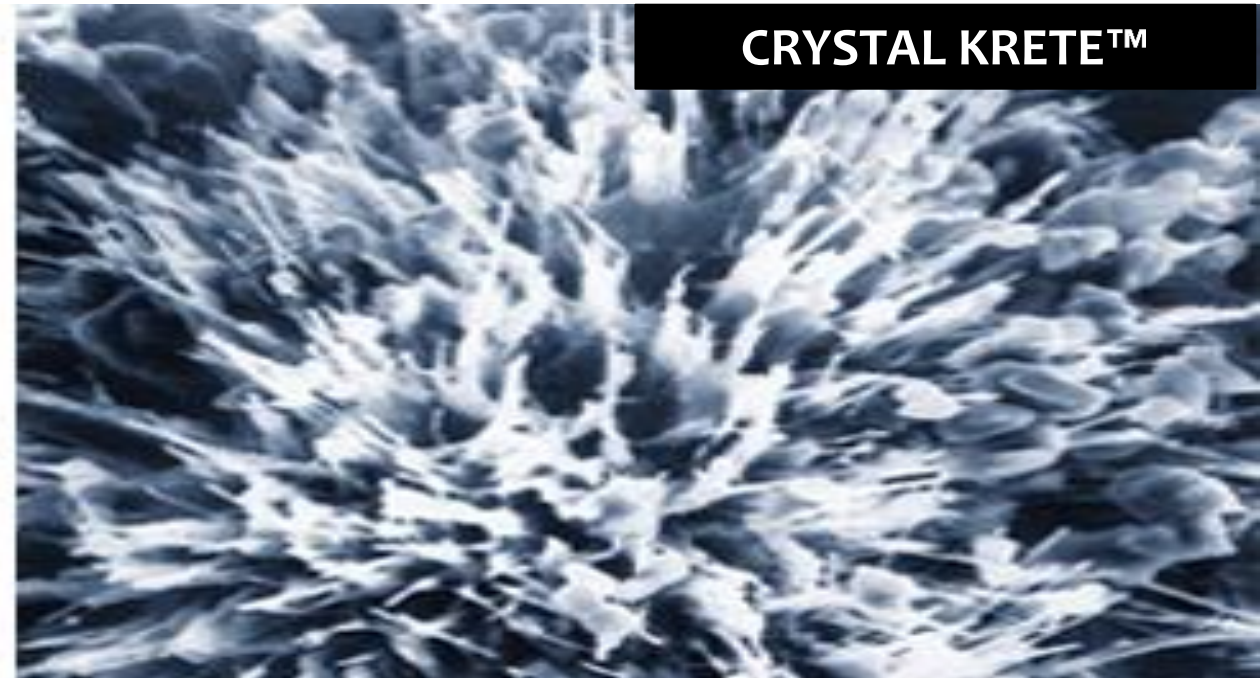
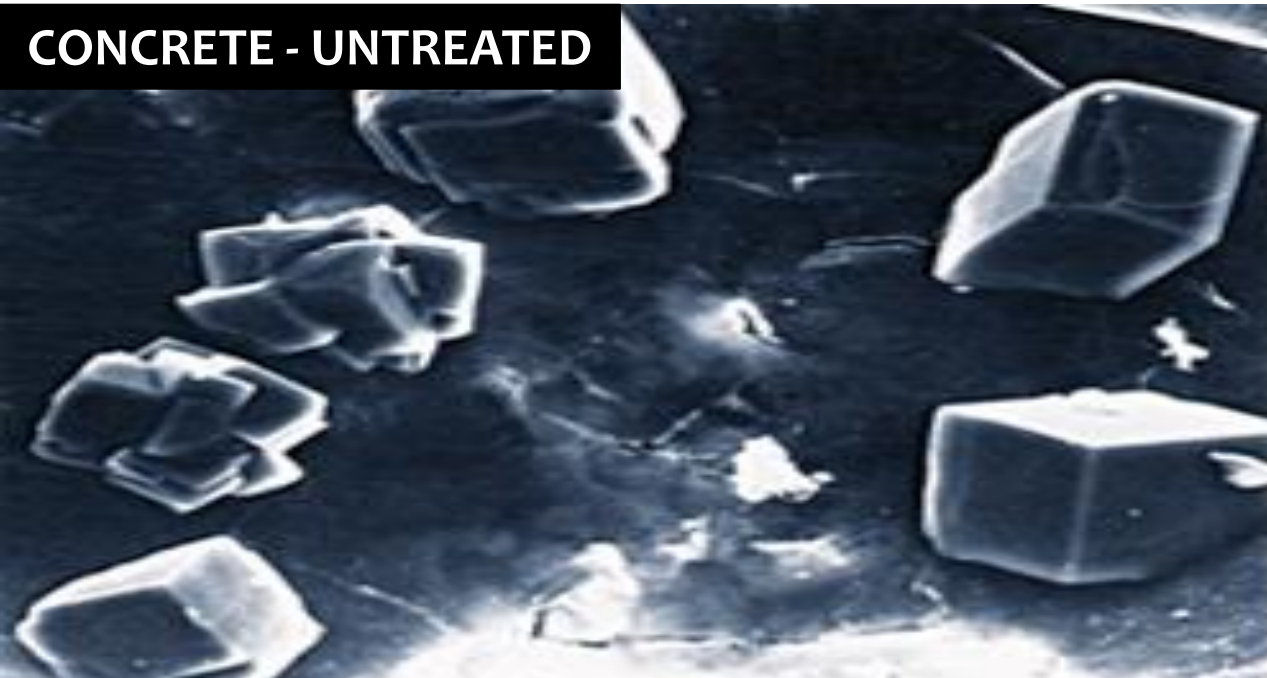
Self - healing Waterproofing Concrete

Advanced Hydrophilic Crystalline Technology



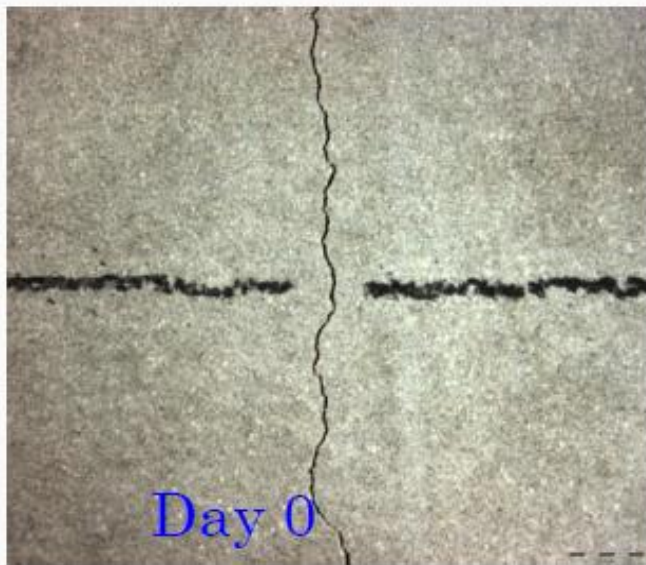
Crystal-Krete™ Hydrophilic Crystalline Technology - In the presence of water, the active ingredients of Crystal-Krete™ react with calcium hydroxide and other by-products of cement hydration to form non-soluble crystals that fill and plug the pores and micro cracks in concrete—even years after concrete was produced. These crystals block the pores of the concrete, making it dense & waterproof.

Crystal-Krete™ transforms the entire concrete structure into an impermeable water barrier with lasting integral waterproofing properties.



The workings of **CRYSTAL KRETE™**

- Micro cracks in concrete may appear due to settlement in buildings. Water then starts to travel through these cracks.
- Active ingredients in **CRYSTAL-KRETE™** reacts with this seepage water to form crystals, which plug the crack and its surrounding capillaries.
- This process will trace the seepage water until it is completely plugged, thereby retaining the structure's original water tightness.
- Cracks are repaired optimally and simultaneously, unlike an externally applied waterproofing membrane.





Crystal Krete™

Self-healing Integral Waterproofing Concrete



1% of ADMIX 204

A concrete specimen is shown in a testing machine. The specimen is a rectangular block with a light gray color. It has handwritten markings "15T/T 1%" and "02" on its surface. The specimen is held between two green vertical rods. A black threaded rod is visible at the top. The specimen shows some dark staining at the bottom, indicating water penetration.

Water Pressure applied after 1 week



1% of ADMIX 204

A concrete specimen is shown in a testing machine. The specimen is a rectangular block with a light gray color. It has handwritten markings "15T/T 1%" and "02" on its surface. The specimen is held between two green vertical rods. A black threaded rod is visible at the top. The specimen shows some dark staining at the bottom, indicating water penetration.

Water Pressure applied after 2 weeks

CRYSTAL KRETE™ Concrete Exposed to Water Pressure (Water Penetration Depth)



1% of ADMIX 204

A concrete specimen is shown in a testing machine. The specimen is a rectangular block with a light gray color. It has handwritten markings "15T/T 1%" and "02" on its surface. The specimen is held between two green vertical rods. A black threaded rod is visible at the top. The specimen shows some dark staining at the bottom, indicating water penetration.

Water Pressure applied after 3 weeks



1% of ADMIX 204

A concrete specimen is shown in a testing machine. The specimen is a rectangular block with a light gray color. It has handwritten markings "15T/T 1%" and "02" on its surface. The specimen is held between two green vertical rods. A black threaded rod is visible at the top. The specimen shows some dark staining at the bottom, indicating water penetration.

Water Pressure applied after 4 weeks

Sulphate Resistance	No internal expansion and cracking under sulfate attack
Chloride Ion Diffusion	Chloride diffusion is reduced > 50% thereby prolongs service life of the structure
Carbonation	Increased Resistance to Carbonation due to reduction in voids and capillaries
Freeze-Thaw cycle	Improved resistance when used with air entrainment admixtures
Concrete Permeability	Water Permeability is drastically reduced (98.1%)
Self-Healing Capacity	Concrete self-heals new micro-cracks up to 0.6mm
Compressive Strength	Compressive strength increases slightly (up to 10%)
Durability Enhancement	REDUCED PERMEABILITY, LOW SHRINKAGE, SELF-HEALING of Micro-Cracks, HARDENS SURFACE, HIGHLY RESISTANT to aggressive and chemical environments thereby leads to enhancement in concrete durability and service life of CRYSTAL KRETE™ Concrete Structures



CRYSTAL KRETE™

Summary Benefit of Crystal Krete™



A mission to reduce carbon footprint

INNOVATIVE CONSTRUCTION MATERIALS

Nikita



+66 83 819 6763



info@icmtechglobal.com



www.icmtechglobal.com

