

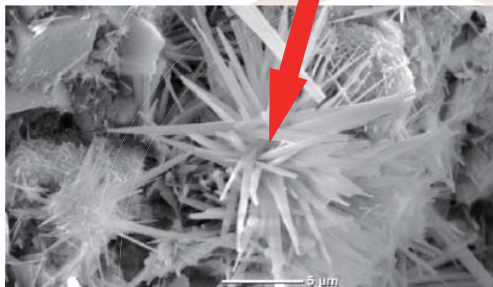
GrowSea™ ND Double Protection Waterproofing System

Nano-modified Cementitious Penetrating Crystalline and Flexible Waterproofing Coating



Incorporating crystalline technology and Nanotechnology into cementitious waterproofing system

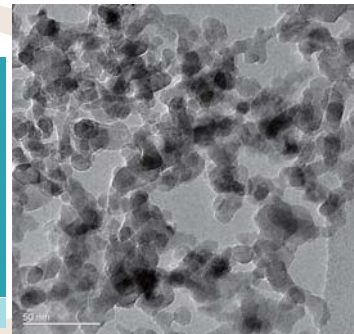
Needle like crystal



SEM of concrete substrate treated with "Growseal™ CCP" Primer

Growseal™ ND is a nano-driven double protection 2 Parts waterproofing system. It consists of "Growseal™ CCP" Primer – a cement based crystalline waterproofing primer can penetrate inside the micro-pores and shrinkage cracks of the concrete substrate by chemical diffusion mechanism, and can react with the unhydrated cement inside the concrete to form insoluble crystals for sealing cracks and prevent vapour pressure building up against waterproofing topcoat.

The second part is "Growseal™ Nano-brush coat" – a polymer modified cement based coating with nanoparticles, which act as self-lubricating that are beneficial to withstand and transfer the tensile force, resulting in a significant improvement of coating flexibility without affecting the adhesion and water impermeability property on dry or damp surface.



Transmission electron microscope (TEM) image of nanoparticles.

Waterproofing Material	Growseal™ ND Double Protection Waterproofing System	Traditional Cementitious Waterproofing Coating	Traditional Crystalline Waterproofing Coating	Modified Polyurethane Waterproofing Coating
Water Impermeability	✓	✓	✓	✓
Waterproof against positive water pressure	✓	✓	✓	✓
Good Flexibility	✓	✗	✗	✓
Good bonding strength on concrete	✓	✓	✓	✗
Compatibility with top finishes	✓	✓	✗	✗
Applied on damp surface	✓	✓	✓	✗
Seal up the voids and cracks in concrete substrate	✓	✗	✓	✗
Waterproofing reactivate in the presence of moisture	✓	✗	✓	✗
Waterproofing against negative water pressure	✓	✗	✓	✗
Easy to apply	✓	✓	✓	✓

Special Feature

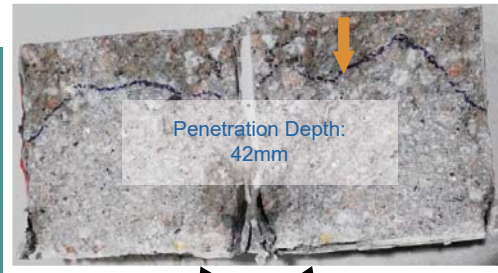
**Superior Waterproof Performance
(0mm Water Penetration under
5 Bar Pressure over 72 Hours).
(BS EN 12390-8)**



Investigation of depth of water penetration under 5 Bar water pressure for 72 hours. No water penetration was found.



Water permeability apparatus



Penetration Depth:
42mm

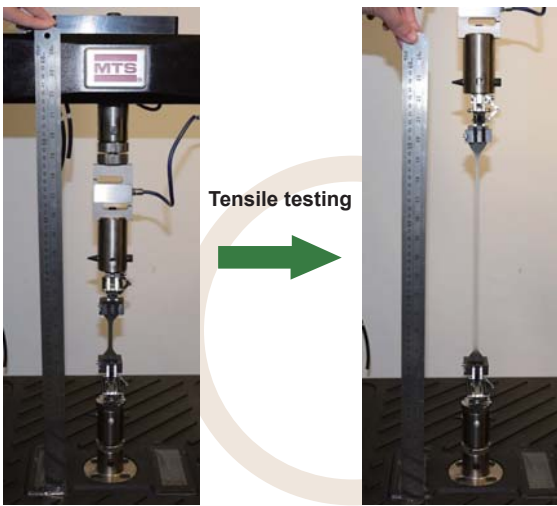
Growseal™ CCP

**Waterproofing against negative water
pressure: 1.4MPa for 14 days**



Automatic concrete water permeability apparatus (CRD-C 48-92)

**High Flexibility with >300%
Elongation Value**

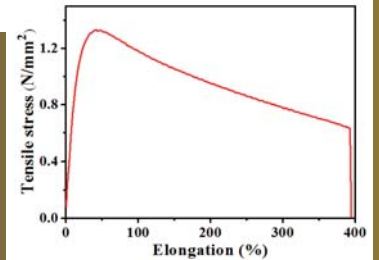


Tensile testing

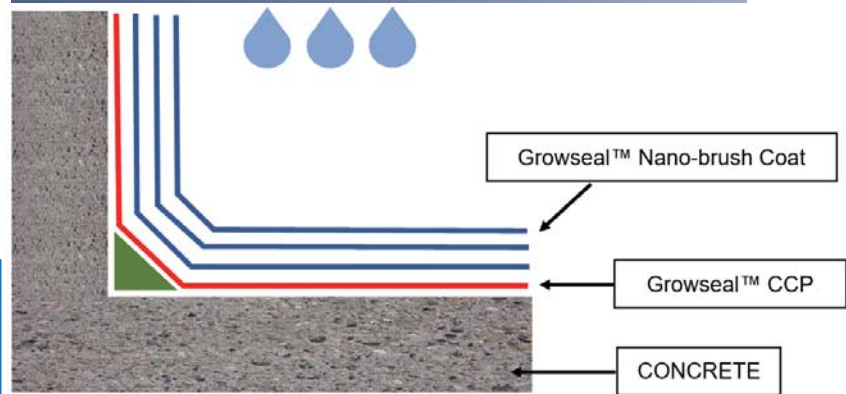
Shapes of the specimen before and during the tensile testing.

Tensile curve of one coating specimen
under tensile testing condition.

The incorporation of nanoparticles promotes a new load transferring mechanism in achieving high flexibility with good tensile strength, and thus covers minor cracks caused by various reasons.



Application



**Growseal™ ND Double Protecting
Waterproofing System is no longer just a
surface covered membrane, it really treats
the core of the substrate and cater future hairline crack development's waterproofing system.**

For more information, please contact

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