

CrystalSeal

Cement Based Crystalline Growth Waterproofing Compound

Description

A cementitious chemical powder compound used to waterproof concrete and masonry surfaces. The organic chemicals in CrystalSeal combine with unhydrated cement particles to form insoluble needle-like crystals that fill pores and permanently block capillaries, voids and cracks.

This unique process gives permanent protection, as CrystalSeal will reactivate if moisture enters any new cracks that develop in the structure.

CrystalSeal Systems

- **CrystalSeal** – unique, self-sealing waterproofing system for concrete and concrete masonry structures, having versatility in application and scope of use and offering protection for the life of the structure.
- **Chemind Waterstop Plug** – rapid set hydraulic cement powder, mixed with water to give an instant patch and plugging compound. Stops leaks in lift pits, sumps. Apply CrystalSeal slurry after leaking is stopped.

Uses

CrystalSeal is designed for residential, commercial and civil construction

- **Waterproof Slurry Coating** – The highly chemically active CrystalSeal compound is used as a two-coat slurry system for critical waterproofing in commercial, residential and civil structures. It is suited to basement floor slabs and walls, lift pits, tunnels, podiums, tanks, water features, landscaped areas, tunnels, reservoirs, water or sewage treatment and power stations.
CrystalSeal may be used to waterproof in-situ concrete, concrete brick or block, cement render, shot-crete and other cementitious structures.
- **Monolithic Waterproofing** – Use CrystalSeal as a dry-shake onto fresh concrete at time of placement. It is then towelled-in to provide a monolithic waterproof structure to suspended, landscaped podium slabs.
- **Admixture** – CrystalSeal is used as an admixture to concrete providing an internal membrane and giving full effect to in-place waterproof concrete for water tanks, basement floors and walls, lift pits, podium slabs and landscaped car park decks.
- **Chemical Waterstop** – CrystalSeal slurry is used as a chemically reactive hydrophobic waterstop at masonry block bed joints, concrete construction joints, block outs, penetrations, etc.
- **Repairs** – Use CrystalSeal and Chemind Waterstop Plug to repair water seepage into concrete and masonry structures.

Features

CrystalSeal is most effective when a constant moist environment is maintained as moisture causes the proliferation of crystalline growth and reactivates the dormant organic CrystalSeal chemicals if new cracks develop in the structure.

- No VOC, meets **Green Star** requirements
- Easy, fast application – brush roller or squeegee
- It has no toxic or hazardous ingredients
- Self-healing to new cracks
- Easy to mix and quick to apply
- Immediate access for finishes
- Becomes an integral part of the structure
- Resists ponded water
- Resists concrete cancer
- Reduces carbon dioxide and chloride ion diffusion
- Permanent waterproofing
- Assists curing, increases concrete strength
- Increases sulphate resistance.
- Protects reinforcing steel.
- Protects against shrinkage cracking.
- Safe in drinking water tanks.

Chemind and WR Grace Membrane systems are available for the design of Total Project Waterproofing Envelope Specifications in tanking, wet areas and exposed, covered or insulated roofing.

Typical Properties

Permeability - K	7.8 x 10 ⁻¹³ cm/sec
Compressive Strength	32 MPa (28 days)
Flexural Strength	4.8 MPa (28 days)
Bond Strength	1.2 MPa (28 days)
Water Penetration	0 (DIN EN12390-8/1048)
Crack Bridging Ability	0.2mm – 0.5mm

Technical Advice

Contact Chemind Technical Department for specific application requirements or remedial procedure and method. Specification assistance for project needs and mix design information is readily available, together with supervision and Quality Control processes for admixture dispensing in ready-mixed concrete use.

Preparation

Surfaces to be sound, clean and free from dust, loose matter, oil, grease or other contaminants. Remove any bony or defective concrete. Coat all exposed sound surfaces with the CrystalSeal slurry and fill flush with Chemind Chembond modified mortar.

For slurry application, concrete must be green or damp. Use Chemind Waterstop Plug to stop any seepage.

Mixing Slurry

To make CrystalSeal slurry, slowly add approx 1 part clean water to 2 parts powder while mixing to achieve a rich, uniform creamy consistency. There should be no lumps or water/aggregate separation. Discard mixed material once it becomes stiff and unusable.

NOTE

- Avoid inhaling dust. The powder and mixed slurry are highly alkaline – prevent contact with bare skin. Refer MSDS - use rubber gloves and protective eye wear.
- Protect aluminium surfaces from direct contact with CrystalSeal slurry coating.

Application Methods

- **Used as a Slurry Coat Waterproofing** – Apply as slurry to in-situ concrete or concrete block. Mix and apply two coats CrystalSeal slurry at 1kg/m² to positive or negative side with nylon bristle brush or broom.

- **Chemical Waterstop** – Apply CrystalSeal slurry at 1 kg/m² to construction joints, bed joints etc with a nylon bristle brush.
- **Applied during concrete pour** – Broadcast dry CrystalSeal powder onto the surface of the fresh concrete immediately after initial screeding and while bleed-water is present. Trowel and finish as required. Do not allow water to pond on treated surface for 3 days after application.
- **Used as an Admixture** – Used at 0.8 - 1.5% on weight of cement and fly ash content. Generally use 5 kg/m³ and blend uniformly into concrete before placement. Reduce water content by approx 10% to compensate for slump increase from CrystalSeal addition.

Coverage

Coverage will vary according to application.

Packaging

CrystalSeal is supplied in 12.5 kg packs as well as 5 kg and 2.5kg for repair works.

Clean-up

Remove uncured CrystalSeal with water.

Shelf Life

Stored CrystalSeal in a cool dry place. Shelf life of unopened or resealed containers is 2 years.



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