



4.09 XPERT SEAL-CS

(Single-component, Crystalline Waterproofing Slurry)

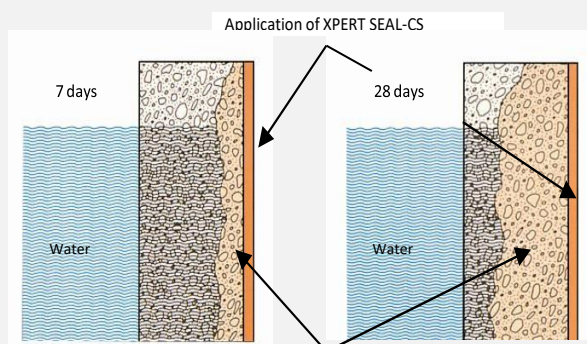
DESCRIPTION

XPERT SEAL-CS is a surface applied material which waterproofs and protects concrete in-depth. It provides a deep seal penetration and permanent protection against fresh and salt water under pressure. It consists of Ordinary Portland Cement, specially treated quartz sand and a compound of active chemicals.

When XPERT SEAL-CS is applied to a concrete surface, the active chemicals combine with the free lime and moisture present in the capillary track, to form insoluble crystalline complexes. This is known as crystallization process. Once the crystals have formed, they remain permanent. These crystals block the capillaries and minor shrinkage cracks in the concrete to prevent any further water ingress. However, the layer will still allow the passage of water vapors through the structure (i.e. the concrete will still be able to "breathe").

Further contact with water will reactivate the sealing process. Thus, the lower depths of the concrete form an integral mass with the surface, which cannot be blown off by hydrostatic pressure. In addition to waterproofing the structure, XPERT SEAL-CS protects concrete against seawater, wastewater, aggressive ground water and certain chemical solutions.

How XPERT SEAL-CS works:



KEY BENEFITS

- > Can withstand up to 30 meters hydrostatic pressure
- > Complies with SS 375: 1994 and PUB approved
- > Can be applied both internally or externally
- > Excellent adhesion
- > Non-toxic
- > Durable - lasts as long as the concrete
- > Economical and simple to apply
- > Protects concrete and reinforcement against corrosive water borne substances.
- > Crystalline action reactivated by contact with water, providing dormant additional protection.

TYPICAL APPLICATIONS

- > Water tanks, portable water tanks and tower
- > Concrete slabs (floor / roof / balcony) Tunnels and Foundations
- > Retaining walls
- > Construction joints
- > Dock gates & dams
- > Sewage treatment plants
- > Lift shaft
- > Reservoirs
- > Swimming pool

TECHNICAL DATA

XPERT SEAL- CS	
Appearance	Grey powder
Density	1.6
Pot life @ 25°C	20 minutes
Initial setting @ 25°C	60 minutes
Water permeability (BTD/TP/02/2002)	8.50×10^{-13}
Water penetration (DIN 1048 : Part 5: 1991)	< 10 mm
Tensile adhesion strength (BS EN 1015-12: 2000)	0.70 MPa
Potable water approval	PUB - Singapore



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All technical data stated herein is based on tests carried out under normal laboratory conditions.

APPLICATION GUIDELINES

Surface Preparation

All concrete to be treated with XPERT SEAL-CS must be clean and have an “open” capillary system. Remove laitance, dirt, grease etc. by means of high pressure water jetting, wet sandblasting or wire brushing.

Faulty concrete in the form of cracks, honeycombing, etc. must be chased out, coated with XPERT SEAL-CS.

Surfaces must be carefully pre-watered prior to the XPERT SEAL-CS application. Dampen (no free standing water) the concrete surface with clean water prior to application.

Note: XPERT SEAL-CS is not a decorative material.

Mixing

Pour water into a clean suitable mixing vessel, then gradually add the XPERT SEAL-CS powder into the water while mixing with a low speed paddle mixer until consistency of thick oil paint is obtained.

Only mix suitable quantities that can be applied within 20 minutes and stir mixture frequently. If the mixture starts to set, do not remix with additional liquid, simply re-stir to restore workability. Mixing Ratio: **use 5 parts XPERT SEAL-CS to 2 parts water by volume.**

Application Method

Slurry Consistency - Apply one or two coats (according to specification) of XPERT SEAL-CS using a masonry brush or appropriate power spray equipment. When two coats are specified, apply the second coat whilst the first coat is still “green”.

Dry Powder Consistency - (for horizontal surfaces only)

The specified amount of XPERT SEAL-CS is distributed in powder form through a sieve and trowelled into the freshly placed concrete once this has reached initial set (when you walk on the concrete you leave an imprint of approx 10 mm)

Post Treatment - Once the XPERT SEAL-CS treatment has reached initial set, moist cure with a fine fog spray of water 2 - 3 times per day for three days. In hot or windy conditions it should be cured more frequently. During the curing period the XPERT SEAL-CS treatment must be protected from rainfall, frost and water puddles.

Coverage

- > Concrete surfaces to be backfilled – one coat of XPERT SEAL-CS at 0.75 kg/m^2 followed by one coat at 1 kg/m^2 . Brush or spray applied.
- > Water retaining structures, internal concrete wall surfaces – two coats of XPERT SEAL-CS each at 0.75 kg/m^2 . Brush or spray applied.
- > Concrete slab (hardened concrete) – apply XPERT SEAL-CS at 1.0 kg/m^2 in one slurry coat or dry sprinkle.
- > Concrete slab (fresh concrete) - trowel apply to concrete when it has reached initial set.
- > Construction joints - XPERT SEAL-CS at 1.5 kg/m^2 applied in slurry or dry powder consistency immediately prior to placing the next lift / bay of concrete.
- > Binding concrete - apply XPERT SEAL-CS at 1.2 kg/m^2 applied in a slurry or dry powder consistency immediately prior to placing the overlay concrete slab.

Note: Coverage rate may vary with substrate condition.

Dry Shake method

Sprinkle XPERT SEAL-CS directly onto the concrete at the rate of $3 - 3.5 \text{ kg/m}^2$ evenly and trowel to required finish or power float.



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Cleaning

Thoroughly clean all tools and equipment with water after use.

PACKAGING

XPERT SEAL-CS is supplied in 20 kg bag. Packaging size may vary, subject to local regulations and requirements.

STORAGE

XPERT SEAL-CS should be stored at room temperature (min 4°C and max 30°C), kept dry and out of direct sunlight. If these conditions are maintained and the product packaging is unopened, then a shelf life of up to 12 months can be expected.

HEALTH & SAFETY

XPERT SEAL-CS should only be used as directed. We always recommend that the Safety Data Sheet (SDS) is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Safety Data Sheet is available upon request from your local XPERT CCPL representative.

CAUTION

May cause eye and respiratory tract irritation. Over exposure may cause skin irritation. Do not take internally. Keep out of reach of children. All label precautions and the MSDS must be fully understood before using this product

WARRANTY

This product is warranted to be free of defects in material and workmanship, and conform to XPERT Construction Chemicals ("XPERT") quality control standards. All recommendations, statements and technical data herein are based on tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty or guaranty of any kind, expressed or implied including but not limited to, an implied warranty of merchantability or an implied warranty of fitness for a particular purpose.

Satisfactory results depend upon many factors beyond XPERT's control. User shall rely on his or her own information and tests to determine suitability of the product for the intended use and user assumes all risk, loss, damage, expense and liability resulting from his or her direct use, indirect use or consequential to their use of the product.

- XPERT shall not be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use or inability to use the product.
- XPERT's sole responsibility shall be to replace that portion of the product, which proves to be defective.
- Any warranty claim must be made within six (6) months from the date of the claimed breach.
- This limited warranty applies only if the product was properly installed and used according to all instructions.
- This limited warranty applies only if the was properly stored prior to use.