

CRYSTAL SEAL

Cementitious Waterproofing Slurry

DESCRIPTION

Permacolour Crystal Seal is a ready-for-use (simply add water) cement based waterproofing slurry. It consists of a blend of cements, graded quartz and active chemical constituents. It is supplied as a fine, grey powder. The material waterproofs sound concrete or a cement surface against dampness, ground water and hydrostatic pressure.

PRINCIPLE USES

Permacolour Crystal Seal is an economical, easily applied method of providing a permanent waterproof barrier on concrete, cement, plaster and cement brick surfaces. It may be used on both new and existing structures on either the wet or the dry side.

APPLICATIONS

- Foundations
- Basements
- Tunnels
- Supporting Walls
- Dams
- Ponds
- Pools
- Silos
- Sewage Plants
- Underground Structures

ACTION

Permacolour Crystal Seal acts by the conversion of the free lime in the concrete to insoluble calcium compounds. These seal against capillary ingress of water into the dry slurry film. Water soluble materials in the slurry penetrate the substrate surface where they in turn crystallize and continue to react in the presence of moisture.

Permacolour Crystal Seal must not be exposed to backwater pressure, running water or rain until it has fully set. The treated surface must be protected from heat and wind and drying should be as slow as possible.

Note Since the crystal seal system is based on a chemical reaction taking place inside the concrete, some moisture penetration can be expected until voids are sealed by the crystallization process.

SURFACE PREPARATION

Permacolour Crystal Seal is designed for use on porous, absorbent surfaces. Highly porous surfaces such as common bricks should be plaster rendered before waterproofing.

All surfaces must be clean and sound. They must be free of laitance, formwork release agent, dust, loose particles and any other foreign matter including fungal growth.

Large cracks and honeycombing should be given a thin coating of Permacolour Crystal Seal mixed as described below. They should then be filled with 3:1 sand/cement mortar prior to applying the overall Permacolour Crystal Seal treatment.

A fillet should be formed using Permacolour Crystal Seal in a slightly stiffer version in all floor/wall joints prior to applying the Permacolour Crystal Seal in the specified manner.

MIXING

Permacolour Crystal Seal only needs the addition of water to be ready for use. Mix Permacolour Crystal Seal with water to produce a viscous, creamy consistency (1 part clean water to approximately 2.5 parts Permacolour Crystal Seal). Mixing may be done by hand or mechanical mixer and should be continued until a homogeneous, lump free product results. In manual mixing lumps may be broken down with the gloved hand. On completion of mixing, material must be used within 30 minutes.

Note Never attempt to reconstitute by further dilution of mixed material that has become too stiff to apply.

APPLICATION

Any surface to be treated with Permacolour Crystal Seal must be fully saturated beforehand, preferably the day before. Surfaces such as floors must be free of ponded water and verticals must be free of water running down the face.

Apply Permacolour Crystal Seal by hand using either a medium-hard block brush or a notched trowel. Treatment must be applied in two or three coats as indicated below. A second coat must be applied as soon as the first coat can no longer be disturbed by brushing. If a third coat is required it must follow within 24 hours, with the surface having again been pre-dampened.

On horizontal surface Permacolour Crystal Seal is normally applied by brush, although the second coat may be notched trowel.

PROPERTIES

Appearance	Fine powder which is somewhat hygroscopic.
Bulk density	1.1 kg per 1.
Service temperature (fully cured)	-50° - +80°C
Shelf Life	6 months in sealed unopened bag
Colour	Grey
Application temperature	Above 5°C
Physiological Effect	As cement
Storage Conditions	Store undercover in cool, dry conditions.
Packaging	5kg, 20kg

Vertical surfaces, except for the final coat of the system are usually applied by notched trowel.

The final coat of a system, be it two or three coats, must be applied by brush and left as smooth as possible.

APPLICATION RATES

- Waterproofing externally against damp earth and moist ground apply 2 coats using 1 to 2kg/m².
- Waterproofing internally against rising damp or up to 1m head of underground water. 2 coats using 2kg - 4kg / m².
- Waterproofing internally to retain water as in reservoirs. Waterproofing externally against more than 1m head of underground water, water pressure surfaces below the water table, earth covered slabs. 3 coats using 5 - 7kg / m².

Note These application rates are based on product being applied to surfaces which have been correctly prepared and are free of excessive voids, roughness and other imperfections.