

PermaSEAL Crystalline Tanking



Description

PermaSEAL Crystalline Tanking is a blend of Portland cements, quality graded aggregates and chemical modifiers which provide a waterproof cement based coating system for masonry and concrete. The slurry works on a crystalline system whereby, silica is absorbed into capillaries and fissures within the substrate. The silica penetrates deeply into the substrate, lining the capillaries permanently. The silica grows into crystals by absorbing moisture. If the structure is dry, the silica will remain inactive but if the structure develops water ingress, the silica will reactivate and absorb the water keeping the internal finishes dry.

With such deep penetration of the active ingredients, the product will still offer protection against water ingress even if the surface coatings were to break away.

The product is mixed with water on site and applied by brush. The special mix design produces excellent adhesion to construction surfaces and is safe to apply on damp substrates. After hardening PermaSEAL Crystalline Tanking becomes a vapour permeable and water pressure tight coating.

Uses

- Tanking of basements and cellars
- Above ground damp proofing
- Sealing of tanks and ducts
- Internal and external waterproofing
- Lining of storage tanks for potable water
- Coating of brick and block work structures

Advantages

- Single component product (just add water)
- Deep penetration into the substrate
- Becomes an integral part of the structure creating a permanent bond
- Can be sprinkled over wet concrete construction joints, pile caps etc. to create a waterproof seal
- Excellent adhesion to prepared surfaces
- Microporous (breathable)
- Conforms to BS 8102:2009 as a polymer-cement based waterproof coating for Type A shallow basement structures – Grades 1, 2 and 3

Preparation

All contact surfaces must be clean and sound. Remove all loose material, laitance, dust and any previous coatings back to clean brickwork, masonry or concrete. All surfaces must be well keyed and if necessary, the substrate can be prepared by suitable mechanical means such as grit blasting, high pressure jet washing or shot blasting.

Any foreign materials in the surface such as nails, timber etc will need to be removed. Any loose joints must be raked out 20mm and any voids must be cleaned.

Once clean these areas can be filled flush with PermaSEAL Fillet Seal prior to tanking. Any physical water ingress should be stopped with PermaSEAL Water Stop before over coating with PermaSEAL Crystalline Tanking.

Please note: surfaces must be smooth and void free. In the instance of concrete blocks, surfaces with air entrapped in them or random stone walls we suggest 3:1 sand/cement scratch coat with the addition of PermaPROOF Waterproofer should be applied to provide a sound, even base prior to the application of PermaSEAL Crystalline Tanking.

Priming

No priming is necessary. On dry surfaces, to assist the coating in fully wetting out, the substrate should be dampened.

Mixing

PermaSEAL Crystalline Tanking is supplied in 25kg units. The water requirement to produce the coating is 8-10 litres of clean water per 25kg of dry powder.

Mechanical mixing is recommended using a slow speed high torque drill with a mortar stirrer. Pour the required quantity of water into a suitable mixing vessel. Slowly add the powder to the water whilst continuously mixing. Mixing should be continued for three minutes after all the powder has been added to the mixing water to obtain a "creamy" consistency. All the powder must be fully blended.

Application

PermaSEAL Crystalline Tanking should be applied by brush or spray in a minimum of two coats. The first coat should be brushed in a horizontal direction down to the floor and across the fillet if applicable.

The second coat should be applied whilst the first coat is still damp which can be within 2-5 hours however this can vary depending on local conditions such as humidity and temperature. It is essential that the first layer is not damaged during application of the second coat.

Apply a second coat of PermaSEAL Crystalline Tanking in a vertical direction again covering the fillet if applicable with the coating. Apply to a 2mm thickness for each coat.

Do not leave more than 24 hours between coats.

If the floor is not being coated with PermaSEAL Crystalline Tanking then the coating should be taken a minimum of 250mm across the floor before terminating.

When joining the floor and wall or corners it is essential to create a fillet at the junction (See PermaSEAL Fillet Seal Data Sheet).

Application Notes

Do not re-temper stiffened material. PermaSEAL Crystalline Tanking should not be applied to frost filled surfaces or when the temperature is 5°C and falling or 25°C and rising.

Do not leave more than 24 hours between coats.

PermaSEAL Crystalline Tanking should not be used in situations where structural movement is expected or has previously occurred (Consult our technical department).

Curing

PermaSEAL Crystalline Tanking is a cement based coating so will dry with the same characteristics as concrete. It is essential that the coating does not dry too fast as cracking could occur.

It is common during the initial drying phase for moisture to form on the tanking surface on internal applications, this is called 'sweating'. This is a natural part of the curing process caused by water vapour condensing onto cold surfaces. The level of sweating will vary according to how much ventilation is available, and the type of heating employed.

When used externally in warm or windy weather, mist spraying must be used to compensate for moisture loss. If the slurry dries too quickly then cracking may occur.

Initial Set @ 20°C = 330 Minutes

Working Time @ 20°C = Up to 1 Hour

Coverage

Coarse surface: 2.5kg to 3kg/m²/coat
8.3 to 10.0 m² per 25 kg unit

Smooth surface: 2kg to 2.5kg/m²/coat
10.0 to 12.5m² per 25 kg unit

Condensation

Below ground structures are prone to condensation and this is generally caused by poor ventilation and inadequate heating. Even after the initial drying period is over condensation may occur if the right circumstances prevail. Therefore, due consideration should always be given to correct ventilation and heating where necessary.

Finish and Decoration

PermaSEAL Crystalline Tanking should always be covered by a 10mm coat of 4:1 sand and cement render, a 1:1:6 Lime based render or PermaSEAL Renovating Plaster. After this render coat has been applied dot and dab plaster board or a multi finish can be applied.

Any initial decoration should be considered as temporary and restricted to a low cost trade emulsion. Plastic, vinyl or eggshell paints should not be used.

Storage and Shelf Life

PermaSEAL Crystalline Tanking has a shelf life of 6 months in bags and 12 months in buckets when kept in dry conditions at a temperature of 5°C to 25°C.