



# PENETRON CRYSTALPROOF

Surface applied concrete waterproofer & durability enhancer

## DESCRIPTION:

PENETRON CRYSTALPROOF is a surface-applied, integral crystalline concrete waterproofing material & durability enhancer, which waterproofs and protects concrete in-depth. It consists of Portland cement, specially treated quartz sand and a compound of active chemicals. PENETRON CRYSTALPROOF needs only to be mixed with water prior to application. When PENETRON CRYSTALPROOF is applied to a concrete surface the active chemicals combine with the free lime and moisture present in the capillary tracts of the concrete to form an insoluble, crystalline structure. These crystals fill the pores and micro cracks in the concrete to prevent any further water ingress (even under hydrostatic pressure). The product still allows the passage of vapour through the structure (i.e. the concrete will be able to "breathe"). In addition to waterproofing the structure, PENETRON CRYSTALPROOF protects concrete against seawater, wastewater, aggressive ground water and many other aggressive chemical solutions. PENETRON CRYSTALPROOF is approved for use in contact with potable water, and is therefore suitable for use in water storage tanks, reservoirs, water treatment plants...etc. PENETRON CRYSTALPROOF is not a decorative material.

## TYPICAL APPLICATIONS:

- Any structural concrete requiring waterproofing & enhanced durability
- Water retaining structures
- Basement retaining walls
- Swimming pools
- Drinking water tanks
- Underground structures
- Sewage & water treatment plants
- Parking structures
- Marine structures
- Concretes exposed to chemicals

## ADVANTAGES:

- Becomes an integral part of the concrete, producing watertight & highly durable concrete.
- Penetrates deeply and seals concrete's capillary tracts and micro cracks
- Increases concrete's compressive strength
- Continuously seals hairline and micro cracks of up to 0.4 mm
- Protects embedded steel against corrosion by chloride ions
- Resists chemical attack (pH3-11 constant contact, 2-12 intermittent contact)
- Provides a range of protection from freeze/thaw cycles, aggressive subsoil waters, sea water, carbonates, chlorides, sulfates and nitrates

- Can be applied from either the positive or negative side
- Waterproofing and chemical-resistance properties remain intact even if the surface is damaged
- Completely effective against high hydrostatic pressure
- More effective overall and less costly than membrane systems
- Easy to apply & labour- cost effective
- Can be applied to moist or green concrete
- Cannot come apart at the seams, tear or puncture
- Does not require protection during backfilling, placement of steel or wire mesh, and other common procedures
- Nontoxic. Suitable for potable drinking water applications

## TECHNICAL DATA:

POT APPEARANCE: Cementitious powder

APPLICATION TEMP: 1°C to 30°C

WORKING TIME AT 20°C: 20 minutes

WATER DOSAGE: Approx 350ml to 400ml of water for every 1kg of product

## COVERAGE:

Approximately 1.5 to 2kg per m<sup>2</sup> for 2 coats.

## PACKAGING:

PENETRON CRYSTALPROOF is supplied in 2kg, 4kg, 10kg & 25kg containers.

## STORAGE & SHELF LIFE

Can be stored in its original container tightly sealed in a dry place for a period of 12 months after production.

## PRECAUTIONS

Always prepare the substrate thoroughly ensuring product is applied to a rough & damp substrate.

Wear suitable protective clothing, rubber gloves, eye protection and a suitable dust mask.

Do not apply product onto surfaces less than 1°C & more than 30° C. Do not use product in temperatures less than 1°C & more than 30° C.

After application cure the product thoroughly for at least 5 days.

#### **SUBSTRATE PREPERATION:**

All surfaces should be roughed, uncoated & clean. The substrate should be free from all coatings, contaminants, loose particles, dirt, mould etc. All cracks, voids, honeycombing & non-moving joints should be filled with a suitable cementitious mortar (PENECONCRETE MORTAR is recommended). All active leaks should first be plugged with PENEPLUG mortar.

**Concrete Slabs:** Hone or acid wash the surface to roughen the surface & open the capillaries; then water blast thoroughly.

**Concrete Walls:** Hone or acid wash the surface to roughen the surface & open the capillaries; then water blast thoroughly.

**Block walls:** Plaster the blockwork first with a 10mm thick high strength solid plaster (0.5 Lime: 1 cement : 3 sand). Bond the plaster to the block with a splash coat using Cemix MULTIBOND (1 cement: 1 sand: Multibond diluted 1 to 2 with water). Do not add Multibond to the plaster. Rough finish the plaster to enhance the PENETRON CRYSTALPROOF bond to the plaster.

#### **MIXING:**

Mix whole containers of product. Mix only as much material as can be used in 20 minutes. Add water to product, not product to water. Add approximately 350ml to 400ml of water for every 1kg of product. Mix with a drill & paddle until the desired consistency is achieved. Mix thoroughly for 2 to 3 minutes. The desired consistency should resemble a semi-fluid slurry paste. In very hot weather consider using chilled mixing water. Keep remixing product during application process.

#### **APPLICATION:**

**Surface Applied:** All surfaces should be dampened just prior to product application. Apply the slurry paste generously to a damp roughened substrate using a stiff bristle masonry brush or suitable spray equipment. Apply product in two coats at a total coverage of approximately 1.5 to 2kg of product per m<sup>2</sup>. Apply the second coat to the 'green' first coat as soon as the first coat is touch-dry. The time between coats should not exceed 6hours. Avoid rain damage to the new coating until it has set.

**Dry Shaking:** Dry shake the powder through a sieve into the top of the freshly placed concrete slab or topping mortar. Trowel finish the product into the surface.

#### **CURING:**

It is very important to cure product thoroughly after it has set by keeping it damp & covering it for at least 5 days.

#### **CLEANING:**

Clean all tools with water immediately after use.

#### **SAFETY & ENVIRONMENT:**

Avoid contact with eyes & skin, both from wet & dry mix. Do not breathe in dust. Wear suitable protective clothing, rubber gloves, eye protection and a suitable dust mask. Wash thoroughly after handling & store any leftover material properly. Keep out of sewers and storm water and dispose of any leftovers as trade waste in accordance with local authority guidelines.

#### **FIRST AID:**

Irrigate eyes & skin with plenty of water & seek medical advice immediately.

**DISCLAIMER:** Recommendations & advice regarding the use of this product are to be taken as a guide only. Other than as appears on this products packaging, CEMIX LTD does not give any warranty express or implied as to the suitability of this product for your particular use, because the usage of this product is beyond the control of CEMIX LTD. If you need advice concerning the use of suitability of this product for your particular application, please contact CEMIX LTD first. If this product is defective because of CEMIX LTD's fault, please contact CEMIX LTD. who will replace it at no cost.