Instructions for use.
Penetron Crystalline Waterproof Coating

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DESCRIPTION.

PENETRON is a surface-applied, integral crystalline waterproofing material, which waterproofs and protects concrete in-depth. It consists of Portland cement, specially treated quartz sand and a compound of active chemicals. PENETRON needs only to be mixed with water prior to application. When PENETRON is applied to a concrete surface; the active chemicals react with moisture and the by-products of cement hydration to cause a catalytic reaction which generates an insoluble, crystalline structure. These crystals fill the pores and minor shrinkage cracks in the concrete to prevent any further water ingress (even under pressure). However, PENETRON will still allow the passage of vapour through the structure (i.e. the concrete will be able to "breathe"). Even after the concrete has cured, PENETRON remains dormant in the concrete and will reactivate in the presence of moisture to seal capillary tracts and hairline cracks. In addition to waterproofing the structure, PENETRON protects concrete against seawater, wastewater, aggressive ground water and many other aggressive chemical solutions. PENETRON is not a decorative material.

RECOMMENDED FOR

PENETRON integral crystalline waterproofing can be applied to all structurally sound concrete – new or old. It may be applied to either the positive or negative sides of the concrete face.

Typical areas of application are:

- Basement retaining walls.
- Tunnels and subway systems.
- Underground vaults.
- Channels Parking structures.
- Construction joints.
- Swimming pools.
- Concrete slabs (floor/roof/balcony, etc.).
- Bridges, dams and roads.
- Sewage and water treatment plants.
- Foundations.
- Reservoirs.

ADVANTAGES

- Becomes an integral part of the concrete, forming a complete body of strength and durability. PENETRON should not be confused with a coating or membrane systems.
- Penetrates deeply and seals concrete's capillary tracts and shrinkage cracks.
- 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 hydrolytic membrane or clay panel systems.
- Easy to apply, labour-cost effective.
- Increases concrete's compressive strength.
- Cannot come apart at the seams, tear or be punctured.
- Does not require protection during backfilling, placement of steel or wire mesh, and other common procedures.
- Seals hairline and shrinkage cracks of up to 0.4 mm (1/64") rather than merely masking or bridging them. ☐ Resists chemical attack (pH 3-11 constant contact, pH 2-12 intermittent contact) and provides a range of protection from freeze/thaw cycles, aggressive subsoil waters, sea water, carbonates, chlorides, sulphates and nitrates.
- Can be applied to moist or "green" concrete. ☐ Protects embedded steel (reinforcing steel and wire mesh) Non-toxic. ☐ Suitable for potable water applications.
- Zero VOC – Penetron powdered products contain zero volatile organic compounds and are safe for use both outdoors and in confined indoor spaces.

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INSTRUCTION FOR USE

DIRECTIONS FOR USE.

Surface Preparation: All concrete to be treated with PENETRON must be clean and have an "open" capillary surface. 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, treated with PENETRON and filled flush with PENECRETE MORTAR. Surfaces must be carefully pre-watered prior to the PENETRON application. The concrete surface must be damp but with no wet sheen on the surface.
Mixing: PENETRON is mechanically mixed with clean water to a creamy consistency or that resembling thick oil. Mix only as much material as can be used within 20 minutes and stir mixture frequently. If the mixture starts to set do not add more water, simply re-stir to restore workability.

Mixing ratios:	**Vertical surfaces**	**Horizontal Surfaces**
Brush Application	5 parts PENETRON® To 2 parts water.	3 parts PENETRON® to 1 part water
Spray Application	5 parts PENETRON® to 2.75-3.25 parts water	

APPLICATION.

Slurry consistency: Apply PENETRON in one or two coats per specification by masonry brush or appropriate power spray equipment. When two coats are specified, apply the second coat while the first coat is still "green".
Dry powder consistency (for horizontal surface only): The specified amount of PENETRON is distributed in powder form through a sieve or a semi-mechanical barrow spreader and trowelled into the freshly placed concrete once this has reached initial set.

APPLICATION RATES:

Vertical Surfaces: Two coats of PENETRON at 0.7-0.8 kg/m² (1.25-1.5 lb/yd²) applied by brush or spray. Please contact your Penetron Representative for alternative application methods that may be applicable to your project and help to increase production.
Horizontal Flatwork: PENETRON at 1.1 kg/m² (2 lb/yd²) applied in one slurry coat to hardened concrete. Alternatively, PENETRON can be dry sprinkled at 1 kg/m²(1.8 lb/yd²) and trowel applied to fresh concrete when it has reached initial set.
Construction joints: PENETRON at 1.6 kg/m² (3 lb/yd²) applied in slurry or dry powder consistency immediately prior to placing the next lift/bay of concrete.
Blinding concrete: PENETRON at 1.4 kg/m² (2.5 lb/yd²) applied in slurry or dry powder consistency immediately prior to placing the overlying concrete slab.
Post-treatment: The treated areas should be kept damp for a period of three days and must be protected against direct sun, wind and frost, by covering with polyethylene sheeting, damp burlap or similar.
Decorative materials: Allow Penetron treated surfaces to cure for 14 days before applying other Penetron products or decorative finishes. Surfaces should be mechanically cleaned (with metal brush, water jet, etc.) to provide adequate surface key for additional finishes.

SPECIAL CONSIDERATIONS

DO NOT apply Penetron under heavy, rainy conditions or at temperatures below 4ºC (40ºF), or to freezing substrates. Consideration should be made to ensure that there is unlikely to be a prolonged period of cold temperatures that will fall below 4ºC (40ºF), during the curing period (approximately 24 hours). PENETRON cannot be used as an additive to concrete or plasters. (PENETRON ADMIX should be considered for these applications).

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CURING.

A misty fog spray of clean water must be used for a curing treatment. Curing should begin as soon as Penetron has set to the point where it will not be damaged by a fine spray of water. Under normal conditions, it is sufficient to spray Penetron-treated surfaces three times per day for two to three days. In hot or arid climates, spraying may be required more frequently. During the curing period, the coating must be protected from rainfall, frost, wind, the puddling of water and temperatures below 36ºF (2ºC) for a period of not less than 48 hours after application. If plastic sheeting is used as protection, it must be raised off the treated substructure to allow the coating to breathe.

NOTE:

For concrete structures that hold liquids (e.g. reservoirs, swimming pools, tanks, etc.), Penetron should be allowed to cure for 12 days before filling the structure with liquid.

PACKAGING.

PENETRON is available in 25kg, 10kg, and 5kg pails.

STORAGE / SHELF LIFE.

When properly stored in a dry place in unopened and undamaged original packaging, shelf life is 12 months. Unused powder material must be immediately returned to the original air tight pails, sealed, and can be used within 6 months.

SAFE HANDLING INFORMATION.

Always use rubber gloves and protective goggles during mixing and application. Product contains Portland cement and is highly alkaline. Avoid contact with skin and eyes. In case of eye contact, rinse immediately with plenty of water. Please study Penetron Admix and Penetron/Penecrete MSDS, Risk Assessment and COSHH sheets for hazardous substances.

KEEP OUT OF REACH OF CHILDREN.

Do not shake or mix the product in a dry condition, avoid creating dust, always add water and mix the products following the product IFU guidelines.

Disposal of Used/Waste Product.

In case of dry contamination to the work area, avoid generating dust. Vacuum, shovel or sweep up spilled material and place in a tightly sealed drum for proper disposal. In case of wet contamination of the work area with prepared wet Penetron products, shovel or sweep up spilled material and place in a tightly sealed drum for proper disposal.

ACCIDENTAL RELEASE MEASURES.

Personal Precautions: Evacuate contaminated area. Do not walk through spilled material. Increase ventilation and wear protective clothing and respiratory protection.

Environmental Precautions.

Keep spilled material and runoff from entering drains, sewers, ditches and waterways. Minimize use of water to prevent environmental contamination.

Methods for Clean-up. Avoid generating dust. Vacuum, shovel or sweep up spilled material and place in a tightly sealed drum for proper disposal.

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