

PENETRON

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 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 minor shrinkage cracks in the concrete to prevent any further water ingress (even under pressure). However, the Penetron will still allow the passage of vapor through the structure (i.e. the concrete will be able to “breathe”). In addition to waterproofing the structure, Penetron protects concrete against seawater, wastewater, aggressive ground water and many other aggressive chemical solutions. Penetron 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 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
- ◆ Parking structures
- ◆ Concrete slabs (floor/roof/balcony, etc.)
- ◆ Tunnels and subway systems
- ◆ Construction joints
- ◆ Foundations
- ◆ Water retaining structures
- ◆ Underground vaults
- ◆ Swimming pools
- ◆ Sewage and water treatment plants
- ◆ Channels
- ◆ Reservoirs
- ◆ Bridges, etc.

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
- ◆ 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, labor- cost effective
- ◆ Increases concrete's compressive strength
- ◆ 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
- ◆ Seals hairline and shrinkage cracks of up to 1/64" (0.4 mm) rather than merely masking or bridging them
- ◆ Resists chemical attack (pH3-11 constant contact, 2-12 intermittent contact) and provides a range of protection from freeze/thaw cycles, aggressive subsoil waters, sea water, carbonates, chlorides, sulfates and nitrates
- ◆ Can be applied to moist or green concrete
- ◆ Protects embedded steel (reinforcing steel and wire mesh)
- ◆ Nontoxic. Approved for potable water applications (NSF 61)

PACKAGING

This product can be purchased in 50lb (22.7 kg) bags or 55lb (25 kg) pails.

STORAGE

When stored in a dry place unopened, undamaged or original packing, shelf life is 12 months.

DIRECTIONS FOR USE

Consumption:

Water retaining structures, internal concrete wall surfaces: Two coats of Penetron at 1.25-1.5 lb/sy (0.7-0.8 kg/m²) or one coat at 2.5 - 3 lb/sy (1.4-1.7 kg/m²) applied with brush or spray.

Construction slabs: Penetron at 2 lb/sy (1.1 kg/m²) applied in one slurry coat to hardened concrete or dry sprinkled and trowel applied to fresh concrete when this has reached initial set.

Construction joints: Penetron at 3 lb/sy (1.7 kg/m²) applied in slurry or dry powder consistency immediately prior to placing the next lift/bay of concrete.

Blinding concrete: Penetron at 2.5 lb/sy (1.4 kg/m²) applied in slurry or dry powder consistency immediately prior to placing the overlying concrete slab.

Surface Preparation:

All concrete to be treated with Penetron integral crystalline waterproofing 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, treated with Penetron and filled flush with Penetron Mortar. Surfaces must be carefully pre-watered prior to the Penetron application. The concrete surface must be damp but not wet.

Mixing:

Penetron is mechanically mixed with clean water to a creamy consistency or that resembling thick oil. Approximate mixing ratio is 2 parts water to 5 parts Penetron powder (by volume). 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.

Applying:

Slurry consistency: Apply Penetron in one or two coats according to 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 and troweled into the freshly placed concrete once this has reached initial set.

Post treatment:

The treated areas should be kept damp for a period of five days and must be protected against direct sun, wind

and frost, by covering with polyethylene sheeting, damp burlap or similar.

Note: Do not apply Penetron at temperatures at or below freezing. Penetron cannot be used as an additive to concrete or plasters. (Penetron Admix should be considered for these applications).

TECHNICAL DATA

Aggregate state:	powder
Color:	cement grey
Bulk density:	approx. 1.25kg/l

*All data are averages of several tests under laboratory conditions. In practice, climatic variations such as temperature, humidity, and porosity of substrate may affect these values.

HEALTH AND SAFETY

Penetron contains cement. Irritating to eyes and skin. Penetron may cause sensitization by skin contact. Keep out of reach of children. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves. For further information please refer to Material Safety Data Sheet.

KEEP OUT OF REACH OF CHILDREN.

WARRANTY

ICS PENETRON INTERNATIONAL LTD. warrants that the products manufactured by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to ICS PENETRON INTERNATIONAL LTD. shall be limited to replacement of the material proven to be defective and shall in no case be liable otherwise or for incidental or consequential damages.

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