

## EFFECTIVENESS:

Penetron's waterproofing effect is achieved by the reaction of the various chemical components contained in the solution when combined within the concrete matrix. The compound penetrates deep into the capillary tracts of the concrete by pressure of osmosis and forms crystals that completely seal the capillaries and shrinkage cracks to drive out moisture. The process works with or against the pressure of water. In the absence of moisture, Penetron components lie dormant. Should moisture recur at any time, the chemical action and sealing process repeats itself automatically and advances even more deeply into the concrete. Penetron chemicals will continuously seal and reseal due to their chemical nature. Crystalline growth from capillary waterproofing has been measured as deep as nearly 1 meter from the point of application. Penetron® is 100% compatible with concrete, brick, mortar, and stone.

## USES:

Penetron is recommended for use in any concrete or block structure where it is required to keep water in or out. Penetron should also be applied to concrete or block structures exposed to potential water or chemical attack and thus requiring permanent waterproofing and protection. Its applicability to either the positive side (side exposed to water) or the negative side (side opposite the water) meets all waterproofing requirements.

## STORAGE:

Shelf life is 12 months when stored in a dry place, unopened, undamaged, and in original packaging.

## BENEFITS:

- 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 head pressure
- More effective overall and less costly than hydrolithic membrane or clay panel systems
- Ease of application, 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 cracks of up to 0.4mm. Does not merely mask or bridge hairline and shrinkage cracks
- Permits concrete to breathe, eliminating water vapor buildup and leaving the concrete completely dry
- Resists chemical attack (pH 3-11 constant contact; pH 2-12 periodic contact) and provides a wide 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 reinforcing steel
- Nontoxic
- Approved for potable water use
- No extensive curing times (except in very hot or low-humidity conditions)

## PACKAGING:



This product can be purchased in 50 lb (22.68 kg) bags or 55 lb (25 kg) pails.

Penetron cementitious capillary waterproofing products are formulations consisting of common cement, quartz sand of special grade, and multiple activating chemicals that provide the most effective permanent concrete waterproofing.

## DIRECTIONS FOR USE:

Consumption:

### **Water retaining structures, internal concrete wall surfaces:**

Two coats of Penetron at 1.25 – 1.5 lb/y<sup>2</sup> (0.65 – 0.80 kg/m<sup>2</sup>) or one coat at 2.5 – 3 lb/y<sup>2</sup> (1.3 – 1.6 kg/m<sup>2</sup>) applied with brush or spray.

**Construction slabs:** Penetron at 2 lb/y<sup>2</sup> (1.00 kg/m<sup>2</sup>) 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/y<sup>2</sup> (1.5 kg/m<sup>2</sup>) applied in slurry or dry powder consistency immediately prior to placing the next lift/bay of concrete.

**Blinding concrete:** Penetron at 2.5 lb/y<sup>2</sup> (1.2 kg/m<sup>2</sup>) 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 Penecrete 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.

## APPLICATION:

**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\*:

<b>Aggregate state:</b>	powder
<b>Color:</b>	cement grey
<b>Bulk density:</b>	approx. 65 lb/y <sup>3</sup> (33.8 kg/m <sup>3</sup> )

*\*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.*

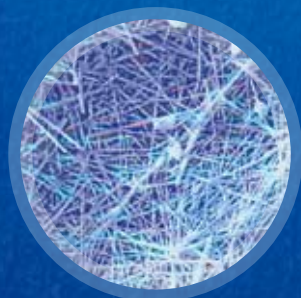
## HEALTH AND SAFETY:

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. ICS/Penetron International, Ltd. shall in no case be liable otherwise or for incidental or consequential damages. ICS/Penetron International, Ltd. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. User shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.



Microscopic examination  
of concrete at 28 days