PENETRON®
TOTAL CONCRETE PROTECTION

PENETRON PLUS®

CRYSTALLINE WATERPROOFING DRY-SHAKE

DESCRIPTION

PENETRON PLUS® is a unique integral crystalline chemical treatment for the waterproofing and protection of concrete. PENETRON PLUS® has been specially formulated for dry-shake applications on horizontal concrete surfaces where greater impact and abrasion resistance is required. Packaged in the form of a dry powder compound, PENETRON PLUS® consists of Portland cement, various active proprietary chemicals, and a synthetic aggregate hardener that has been crushed and graded to particle sizes suitable for concrete floors.

PENETRON PLUS® becomes an integral part of the concrete surface, thereby eliminating problems normally associated with coatings (e.g. scaling, dusting, flaking and delamination). The active chemicals react with the moisture in the fresh concrete causing a catalytic reaction that generates a non-soluble crystalline formation within the pores and capillary tracts of the concrete.

APPLICATIONS

Sewage and Water Treatment Plants
Traffic Bearing Surfaces
Warehouse Floors
Foundation Slabs
Below-grade Structures
Parking Structures

ADVANTAGES

Resists extreme hydrostatic pressure from either positive or negative surface of the concrete slab
Becomes an integral part of the concrete
Highly resistant to aggressive chemicals
Can seal hairline cracks up to 1/51" (0.5 mm)
Allows concrete to breath
Non-toxic. Approved for use in potable water applications (NSF 61)
Less costly to apply than most other methods
Permanent
Increases flexibility in the construction schedule
Zero VOC - PENETRON powdered products contain zero volatile organic compounds and are safe for use both outdoors and in confined indoor spaces

DIRECTIONS FOR USE

Application rate:

Under normal conditions, the coverage rate for PENETRON PLUS® is 1 lb/yd² (0.6 kg/m²), depending on the degree of abrasion resistance required.

NOTE: Under heavy traffic conditions or where even greater abrasion resistance is required, consult a PENETRON technical representative for a recommendation that meets your specific needs.

Application procedures:

1. After fresh concrete is placed, consolidated and leveled, wait until concrete can be walked on leaving an indentation of 1/4-1/3" (6-8 mm).
2. Concrete should be free of bleed water and be able to support the weight of a power trowel. Float open the surface.
3. Immediately after floating open the surface and within one hour of finishing the concrete, apply one-half of the dry-shake material by hand or mechanical spreader. The dry-shake material must be spread evenly.
4. As soon as the dry-shake material has absorbed moisture from the base slab, it should be floated (power or trowel) to the surface.
5. Immediately after floating (power or trowel), apply remaining dry-shake material at right angles to the first application.
6. Allow remaining dry-shake material to absorb moisture from the base slab and then float (power or trowel) the material into the surface. When concrete has hardened sufficiently, trowel surface to the required finish.

Curing:

Curing is important and should begin as soon as final set has occurred but before surface starts to dry. Conventional moist curing procedures such as water spray, wet burlap or plastic covers may be used. Curing should continue for at least 48 hours. In hot, dry sunny conditions consult manufacturer for specific instructions. In lieu of moist curing, concrete sealers and curing compounds meeting ASTM C309 may be used. In all cases, follow ACI guidelines and recommendations for proper curing.

NOTE: It is common that edges of a slab wall will set up earlier than the main body of concrete. Such edge areas can be dry-shaked and finished with hand tools prior to proceeding with application of the main body of concrete.

COVERAGE

One 40-lb (18-kg) bag covers approximately 360 ft² (34 m²)
One 55-lb (25-kg) pail covers approximately 495 ft² (46 m²)

SPECIAL CONSIDERATIONS

- → For the best results when applying dry-shake materials, the air content of the concrete should not exceed 3% (a high air content can make it difficult to achieve a proper application). If a high entrained air content is specified (e.g. for concrete that will be exposed to freezing and thawing), contact the Penetron Technical Department for further application information.
- → In hot, dry, or windy conditions, it is advisable to use an evaporation retardant on the fresh concrete surface to prevent premature drying of the slab.
- → Chronic moving cracks or joints will require a suitable flexible sealant.
- → For certain concrete mix designs, we recommend a test panel be produced and evaluated for finishing. For example, high performance concrete with a low water/cement ratio, air entrainment, super plasticizers, or silica fume may reduce bleed water and make the concrete more difficult to finish.

PACKAGING

PENETRON PLUS® is available in 40-lb (18-kg) bags or 55-lb (25-kg) pails.

STORAGE / SHELF LIFE

PENETRON products must be stored dry at a minimum temperature of 45ºF (7ºC). Shelf life is two years when stored under proper conditions.

TECHNICAL SERVICES

For more detailed instructions, alternative application methods, or information concerning the compatibility of the PENETRON treatment with other products or technologies, contact the Penetron Technical Department or your local Penetron representative.

SAFE HANDLING INFORMATION

PENETRON PLUS® is alkaline. As a cementitious powder or mixture, PENETRON PLUS® may cause significant skin and eye irritation. Wear proper skin and eye protection. In the event of skin or eye irritation, wash the affected area with clean water and seek immediate medical attention.

Penetron International, Ltd. also maintains comprehensive and up-to-date Safety Data Sheets on all its products. Each sheet contains health and safety information for the protection of your employees and customers. KEEP OUT OF REACH OF CHILDREN.

Contact Penetron International, Ltd. or your local Penetron representative to obtain copies of Safety Data Sheets prior to product storage or use.

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PENETRON PLUS
for structural and non-structural repair CC mortar
Compressive strength: Class R3 (≥ 25 MPa)
Chloride content: < 0,05 % by mass
Adhesive bond: NPD
Restrained shrinkage, expanding: NPD
Elastic modulus: NPD
Thermal compatibility (Part 1): NPD
Corrosion behaviour: deemed to have no corrosive effect
Reaction to fire: NPD
Dangerous substances: NPD

WARRANTY: 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 PENETRON INTERNATIONAL, LTD. shall be limited to replacement of the material proven to be defective, and PENETRON INTERNATIONAL, LTD. shall in no case be liable otherwise or for incidental or consequential damages. **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 its intended use and assume all risks and liability in connection therewith.

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