

CRYSTALLINE WATERPROOFING ADMIXTURE

**DESCRIPTION**

PENETRON ADMIX® SB (Soluble Bag integral crystalline waterproofing admix) is added to the concrete mix at the time of batching. PENETRON ADMIX® SB consists of Portland cement, very fine treated silica sand and various active, proprietary chemicals. These active chemicals react with the moisture in fresh concrete and with the by-products of cement hydration to cause a catalytic reaction, which generates a non-soluble crystalline formation throughout the pores and capillary tracts of the concrete. Thus, the concrete becomes permanently sealed against the penetration of water or liquids from any direction. The concrete is also protected from deterioration due to harsh environmental conditions. PENETRON ADMIX® SB has been specially formulated to meet varying project and temperature conditions (see *Setting Time and Strength*). Consult with PENETRON ROMANIA for additional detailed support for your project.

**RECOMMENDED FOR**

- ▶ Reservoirs
- ▶ Sewage and water treatment plants
- ▶ Secondary containment structures
- ▶ Tunnels and subway system
- ▶ Underground vaults
- ▶ Foundations
- ▶ Parking structures
- ▶ Swimming pools
- ▶ Pre-Cast, Cast-in-Place and Shotcrete applications

**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 0,5 mm (1/51")
- ▶ Allows concrete to breathe
- ▶ Non-toxic (NSF 61 certified for potable water applications)
- ▶ Less expensive than traditional methods
- ▶ Permanent
- ▶ Added to the concrete at time of batching and therefore is not subject to climatic restraints
- ▶ Reduces construction scheduling time
- ▶ Improves durability of concrete
- ▶ Permeability Reducing Admixture for Hydrostatic conditions (PRAH)
- ▶ Zero VOC – PENETRON powdered products contain zero volatile organic compounds and are safe for use both outdoors and in confined indoor spaces
- ▶ Exceeds requirements of ASTM C494-S (Specific Performance Admixtures)

**TECHNICAL CHARACTERISTICS**

**Technical characteristics of concrete after PENETRON ADMIX® application**

Characteristic	Test Result	Test Method
Water permeability	≤ 5,35x10 <sup>-13</sup> cm/s after 56 days	DIN 1048
Compressive strength	≥ 6% after 28 days	ASTM C39

All data are average values obtained under laboratory conditions. Impractical use, temperature, humidity and absorption of the substrate may influence the above given values.

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**DIRECTIONS FOR USE**

**Mixing:** PENETRON ADMIX® SB must be added to the concrete at the time of batching.

The sequence of procedures for addition will vary according to the type of batch plant operation and equipment. The following are some typical mixing guidelines. For more detailed information on dosing procedures contact PENETRON ROMANIA

**Mixing ratios:** PENETRON ADMIX® SB is designed to be dosed at the rate of one soluble bag per cubic meter (or cubic yard) of concrete. For most mix designs in use, this falls within the range of acceptability of 0,8-1% by weight of cement. Consult with PENETRON ROMANIA for assistance in verifying the appropriate dosage rate and for further information regarding enhanced chemical resistance and optimum concrete performance for your project.

**Application:**

**Ready Mix Plant - Dry Batch Operation:** Add PENETRON ADMIX® SB directly into the drum of the ready-mix truck and immediately before charging the drum with 60% - 70% of the required mix water along with 136-227 kg (300-500 lb) of aggregate. Mix the materials for 2-3 minutes to ensure PENETRON ADMIX® SB is distributed evenly throughout the mix water. Add the balance of materials to the ready-mix truck in accordance with standard batching practices.

**Ready Mix Plant - Central Mix Operation:**

Ideally, PENETRON ADMIX® SB should be added directly into the central mix drum before all other ingredients. However, when this is impractical or unsafe, PENETRON ADMIX® SB can be added directly into the drum of the ready-mix truck, immediately before charging with concrete. The dosed concrete should be allowed to mix in accordance with ACI guidelines or for a minimum of 70 revolutions at standard mixing speeds (approximately 5 minutes) to ensure even distribution of PENETRON ADMIX® SB throughout the concrete.

**Precast Batch Plant:** Add PENETRON ADMIX® to the rock and sand, then mix thoroughly for 2-3 minutes before adding the cement and water. The total concrete mass should be blended using standard practices.

**NOTE:** It is important to obtain a homogeneous mixture of PENETRON ADMIX® SB with the concrete. Therefore, do not add dry PENETRON ADMIX® SB powder directly to wet concrete as this may cause clumping and thorough dispersion will not occur. For further information regarding the proper use of PENETRON ADMIX® SB for a specific project, consult PENETRON ROMANIA.

**Setting Time and Strength:** The setting time of concrete is affected by the chemical and physical composition of ingredients, temperature of the concrete and climatic conditions. Retardation of set may occur when using PENETRON ADMIX® SB. The amount of retardation will depend upon the concrete mix design and the dosage rate of PENETRON ADMIX® SB. However, under normal conditions, PENETRON ADMIX® SB will provide a normal set concrete. Concrete containing PENETRON ADMIX® SB may develop higher ultimate strengths than plain concrete. Trial mixes should be carried out under project conditions to determine setting time and strength of the concrete. Concrete treated with PENETRON ADMIX® SB should be placed and finished in accordance with good concrete practices. ACI guidelines and recommendations should be observed.

**SPECIAL CONSIDERATIONS**

When incorporating PENETRON ADMIX® SB, the temperature of the concrete mix should be above 4 °C (40 °F).

**PACKAGING**

PENETRON ADMIX® SB is available in 3 kg (6,6 lb) soluble bags, packed 6 bags to a plastic pail. For large projects, customized packaging is available.

**STORAGE / SHELF LIFE**

PENETRON products must be stored dry at a minimum temperature of 7 °C (45 °F). Shelf life is one year when stored under proper conditions.

**SAFE HANDLING INFORMATION**

PENETRON ADMIX® SB is alkaline. As a cementitious powder or mixture, PENETRON ADMIX® SB may cause significant skin and eye irritation. Penetron International, Ltd. also maintains comprehensive and up-to-date Material Safety Data Sheets on all its products. For further information please refer to Safety Data Sheet. Each Safety Data Sheet contains health and safety information for the protection of your employees and your customers.

## CRYSTALLINE WATERPROOFING ADMIXTURE

## WARRANTY – DISCLAIMER

BEST IMPORT PRODUCTS PENETRON 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 BEST IMPORT PRODUCTS PENETRON shall be limited to replacement of the material proven to be defective, and BEST IMPORT PRODUCTS PENETRON shall in no case be liable otherwise or for incidental or consequential damage. BEST IMPORT PRODUCTS PENETRON 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.

BEST IMPORT PRODUCTS PENETRON may particularly differentiate its versions of the product's data sheet compared with those of PENETRON INTERNATIONAL LTD or respective PENETRON companies worldwide. These changes are due to text formatting, different application weathering and procedures or different product

## CERTIFICATION



1085-CPR-0044

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PENETRON ADMIX

Crystalline Capillary Admixture Water Resisting Admixture

Chloride content: &lt; 0,10 % by mass

Alkali content: &lt; 10,3 % by mass

Compressive strength: ≥ 85% of control

Conventional dry material content: &gt; 99,5%

Air content in fresh concrete: ≤ 2% by volume

Capillary absorption (after 90-day curing): ≤ 60% by mass

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