

VANDEX AM 10

Integral crystalline waterproofing admixture powder that self-heals and seals concrete.

DESCRIPTION

VANDEX AM 10 is an integral crystalline admixture powder specifically formulated to interact with concrete capillary pore structures to provide a waterproofing system that is a permanent part of the concrete matrix. VANDEX AM 10 can be used in above- and below-grade applications. Active chemicals combine with the free lime and moisture present in the capillary tracts and pores, to form insoluble crystalline complexes. These crystals block the capillaries and hairline shrinkage cracks up to 0.5 mm in the concrete to prevent any further water ingress (even under pressure). However, the concrete will still allow the passage of water vapour through the structure (i.e. the concrete will still be able to "breathe").

BASIC USES

- Water and waste water treatment facilities
- Foundations and basements
- Marine structures
- Precast concrete
- Tunnels and subways
- Dams and water reservoirs
- Manholes
- Underground vaults
- Parking structures
- Swimming pools
- Water containment structures

FEATURES & BENEFITS

- Eliminates or reduces water penetration
- Water resisting concrete admixture EN934-2:T9
- Interior or exterior waterproofing against high hydrostatic pressure, PRAH (ACI 212.3R-10 Ch.15.1)
- No adverse effect on compressive strength or setting time with Portland cement
- Self-healing properties sealing cracks up to 0.5 mm
- Easy to use powdered material
- Negligible effect on working time, increasing flexibility

- Highly improves chemical resistance
- Very economical compared to other methods
- Vapour diffusion in concrete is not blocked

PACKAGING

10 kg bags; 20 kg bags. Others on request.

SHELF LIFE

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

DIRECTIONS FOR USE

VANDEX AM 10 can be used in drum mixed and central batched concrete applications. It should be added to the initial batching sequence preferably as the aggregate is being added to the mixing vessel. Concrete should be mixed a minimum of 8–10 minutes, at normal mixing speed, after all concrete constituents have been batched to ensure thorough dispersion of all materials. VANDEX AM 10 should not be added to the concrete mixture after the cementitious ingredients have been introduced.

DOSAGE

VANDEX AM 10 is typically dosed at 1 to 2% by weight of cementitious material (BWC) depending on application. Please consult your local Vandex representative for further dosage recommendations.

SAFETY PRECAUTIONS

- VANDEX AM 10 should be added to the aggregate as it is being batched or to the initial batching sequence.
- Do not add VANDEX AM 10 at the end of the batching sequence. Adding VANDEX AM 10 to the end of the batching sequence may result in extended setting characteristics or premature stiffening of the concrete.



- VANDEX AM 10 may require a slight increase in air entrainment dosage.
- In all cases, consult the Safety Data Sheet before use.
- Preliminary testing is encouraged to ensure concrete performance of all project concrete ingredients.
- Setting times may be slightly extended depending on cement chemistry. However, under normal conditions, VANDEX AM 10 will provide a normal set concrete.

EVALUATION OF SELF-HEALING CAPACITY IN CONCRETE

Controlled crack formations up to 0.5mm have been induced in specimens of reference concrete and reference concrete modified by 2.0% bwoc VANDEX AM 10. After an application of hydrostatic water pressure (PRAH) of 1350 Pa a reduction of flow up to 90% and crack sealing crystallizations could be determined.

TECHNICAL DATA (Waterproofing)

TEST TYPE	METHOD	TEST PARAMETERS APPROX	PERFORMANCE RELATIVE TO CONTROL
Determination of max. depth of water penetration	EN 12390-8	5 bar pressure head	15 mm
Water penetration	DIN 1048	5 bar pressure head	40% reduction
Water permeability CRD C48-92	CRD C48-92	13.8 bar (200 psi) head pressure	> 70% reduction
Capillary absorption EN480-5:2005	ASTM C-1585	7 days: \leq 50% by mass of control mix	
		90 days: \leq 60% by mass of control mix	

Note: The performance of Vandex AM10 is subjected to the concrete constituents and mix design

TECHNICAL DATA (General Properties)

TEST TYPE	METHOD	TEST PARAMETERS APPROX	PERFORMANCE RELATIVE TO CONTROL
Flexural Strength	ASTM C-78		7 days - 5.1 MPa 28 days - 5.4 MPa
Freeze / Thaw resistance	ASTM C 666		300 cycles - 93.8% Relative Durability
Potable Water Compliance	NSF 61 (USA)		No harmful effects in potable water contact.
Length Change	ASTM C-157		up to 20% reduction
Sulphate resistance	ASTM C1202	6 months	33% improvement
Admixtures for concrete	ASTM C-494	type S, performance	passed
Chloride ion content	EN 480-10		< 0.1 M %
Alkali content	EN 480-12		< 10.5 M %
Corrosion behaviour	EN 480-14		no corrosion observed

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