betoNEX AD7

INTEGRAL CRYSTALLINE ADMIXTURE

betoNEX AD7 is an integral crystalline admixture powder added to the concrete mix at the time of batching. **betoNEX AD7** is specially formulated to interact with concrete capillary pore structure to provide a waterproofing system. **betoNEX AD7** consists of Portland Cement and various active proprietary chemicals. These active chemicals react with the moisture in fresh concrete and with the by – products of cement hydration to produce non – soluble crystal by catalytic reaction. These crystals block the capillaries and minor shrinkage cracks in the concrete to prevent any further water ingress (even under pressure).

AREA OF APPLICATIONS

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

COMPRESSIVE STRENGTH ASTM C 39

- 7 Days - 29.5MPa
- 28 Days - 39.0MPa

An increase of up to 8% compared to control sample

RAPID CHLORIDE PERMEABILITY ASTM C1202

An improvement of 10% compared to control sample

PROPERTIES

- Resists extreme hydrostatic pressure
- Becomes an integral part of the concrete
- Highly resistant to aggressive and chemical environment
- Can self-heal static hairline cracks up to 0.4mm
- Allows concrete to breathe
- Less costly to apply compared than most other methods.

TEST DATA

Permeability Test
At the completion of the test, the specimens (150mm x 150mm) did not exhibit any water leakage. All specimens were tested for 14 days at 14 bar. A reduction of more than 70% compared to control samples.

Water Penetration – DIN 1048
Specimens (150mm x 150mm) exhibited an average water penetration of 17mm when tested for 72 hours under 5.0 bar, 45% reduction compared to control sample.

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CHEMICAL ADMIXTURES ASTM 494 TYPE S (SPECIFIC PERFORMANCE)

Reported are the chemical and/or physical properties of cement and aggregates used and the results obtained in test of concrete and aggregates used**. betoNEX AD7** meets the requirements for Type S.

PACKAGING AND STORAGE

20KG Plastic Bag

When stored in dry place in unopened, undamaged original packing, the shelf life is 6 months

APPLICATIONS

betoNEX AD7 is added to the concrete at the time of batching. It is important to obtain a homogeneous mixture of **betoNEX AD7** with the concrete. Do not add dry powder directly to wet mixed concrete as this could cause clumping and through dispersion may not occur. The sequence of procedures for addition will vary according to the type of batching plant operation and equipment.

- Addition to mixer – add **betoNEX AD7** powder directly to the batching mixer manually or through computer-controlled mass batching system
- Truck addition (at plant) – add **betoNEX AD7** mixture (mixed with water at ratio 1 : 1) to the drum of the ready mix truck. Mix for 5 – 7 minutes to ensure the admixture dispersed well and mixed homogenously.

TECHNICAL DATA

Test Type	Method	Test Parameters	Performance Relative To Control
Pressurized Water Penetration	EN 12390 – 8	1% Dosage	Passed
Water Penetration	DIN 1048	5 bar(72 psi) head pressure	40% reduction
Water Permeability	CRD C48 – 92	13.8 bar (200 psi) head pressure	>70% reduction
Capillary Absorption	ASTM C – 1585		>40% reduction
Compressive Strength	ASTM C – 39		Equal to and up to 8% increase
Resistance To Chloride Penetration	ASTM C1202		10% improvement
Length Change	ASTM C – 157		Up to 20% reduction
Sulphate Resistance	ASTM C – 1012	6 months	33% improvement
Admixtures For Concrete	ASTM C – 494	Type S Performance	passed
Slump	EN 12350 – 2		62mm at 2% dosage
Chloride Ion Content	EN 480 – 10		≈ 0.1M%
Alkali Content	EN 480 – 12		≈ 10.5M%
Corrosion Behaviour	EN 480 – 14		no corrosion observed
Compressive Strength	EN 12390 – 3		At 7 days : Test mix ≈ 110% control mix
Water Reduction	EN 934 – 2		In test mix ≥ 5% compared with control mix.
Air Content	EN 12350 - 7		Test mix ≤ 2% by volume above control mix

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