

FIBCON CIA

Corrosion Inhibitor Admixture

DESCRIPTION

Fibcon CIA is a Calcium Nitrite based admixture designed to inhibit the corrosion of steel reinforcement in concrete. This product contains a 30% Calcium Nitrite with maximum calcium nitrate content of 3% and also contains salt of Hydroxycarboxylic acid to offset the accelerating effect of Calcium Nitrite. When used at recommended dosage rates, this product introduces the proper, industry recognised amount of anodic inhibitor.

How Calcium Nitrite works

Good quality concrete has high pH environment that allows for the formation of a natural layer of iron oxide to form on reinforcing steel. This layer of iron oxide called the passivating layer (specifically ferric oxide) protects the reinforcing steel from rusting.

The protective ferric oxide layer around the reinforcing steel has microscopic defects of ferrous oxide. Chloride ions that reach the steel at these defect points initiate corrosion. As corrosion continues on the ferrous oxide, the ferric oxide is undermined by chloride ions and rust is produced.

Staining, cracking and spalling of concrete occurs due to the corrosion products (rust) formed.

Calcium Nitrite protects steel in concrete by keeping the chloride ions from reacting with the ferrous ions of ferric oxide defects.

AREAS OF APPLICATION

- Exterior steel reinforced concrete
- Structural and plain concrete
- Parking decks and exposed balconies

FEATURES & BENEFITS

- Calcium Nitrite based formula used for many years in concrete industry.
- Chemically inhibits the corrosion process
- Compatible with other commonly used FCC Pvt. Limited's admixtures
- Dosage rate is directly related to expected chloride concentration
- Increases protection for reinforcement in concrete.

TECHNICAL SPECIFICATIONS

The following results were developed under laboratory conditions

pH Value : 8.0 to 10.5

Specific Gravity : 1.25 to 1.53

Freezing Point : -18oC

Setting: Fibcon CIA is a neutral set concrete admixture.

Slump : Fibcon CIA has little effect on the slump of concrete

TECHNICAL SPECIFICATIONS- Contd

Form	-	Paste
Colour	-	Component A - Colourless Component B - Light Brown Component C - White Mixture - Grey
Density	-	1.65 kg/ ltr
Mix Ratio	-	0.24 : 0.14 :0.62
Pot life at 30oC	-	2 hrs



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APPLICATION METHODOLOGY

Mix Design : It is strongly recommended the optimum mix trials be made before the start of job site pours. This will allow the ready-mix concrete producer to determine the proper batching sequence and the required dosage of other admixtures needed to deliver the specified concrete mix to the job site. Fibcon CIA may be added with the concrete batch water. It should not be mixed with any other admixture prior to being introduced into the concrete mixer. Mix designs are supplied upon request.

DOSAGE RATE

The chloride to nitrite ratio is important. The project specification will indicate or specify the amount of chloride ions protection necessary. The dosage rate of Fibcon CIA is directly related to the level of chloride protection.

Normally, Fibcon CIA can be used in 10 ltr - 30 ltrs per m³ concrete. When no specified chloride ion protection is specified contact your local STP sales representative.

CLEAN-UP

Clean tools and equipment with water before concrete hardens.

CEMENT AND ADMIXTURE COMPATIBILITY

Fibcon CIA is compatible with all types portland cements, concrete and concrete containing pozzolanas. Fibcon CIA can be used in concrete mixes with other admixtures including air entraining admixtures, water reducers, retarders, superplasticizers, microsilica, flyash and slags.

Each admixture must be added separately to the concrete mix.

PRECAUTIONS

- Store at temperature above -18oC. When Fibcon CIA freezes, its corrosion inhibition is completely restored by thawing and thorough agitation.
- Do not dispense directly onto dry cement.
- Quality concrete is necessary to slow the ingress of chloride into the concrete. According to ACI 318, the "Building Codes Requirements for Reinforced Concrete" requires certain design constraints, such as maximum water to cement ratio and providing adequate cover over the reinforcing steel. All pertinent codes and guides should be consulted prior to final approval of mix design
- Additional protection can be achieved by using high range water reducing admixtures (such as Fibcon 37) to reduce the water to cement ratio. Also, the use of Shalcrete MS, a silica fume admixture can be used to reduce concrete permeability.

STORAGE

6 months in original packing. Store in a cool, dry place

PACKAGING

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