

# DUPLAST CI

## Corrosion Inhibiting Admixture

### Description

Duplast CI is a calcium nitrite-based admixture designed to inhibit the corrosion of steel in reinforced concrete. Duplast CI contains a minimum of 30% calcium nitrite by mass and meets the requirements of ASTM C 1582, Corrosion Inhibiting Admixture and ASTM C494, Type C, Accelerating Admixture.

### Areas of Application

- In the high alkalinity of concrete, reinforcing steel builds up a natural passivation layer. This layer protects the steel from corrosion. This passive ferric oxide layer however can be damaged by the presence of chlorides and combined with the presence of moisture and oxygen which will lead to corrosion of the steel.
- Duplast CI will help oxidize the steel to form ferric oxide, which resists chloride attack. This reduces the areas of ferrous oxide ions that are susceptible to attack by chlorides. Ferrous oxide creates a ferrous oxide complex (rust), if attacked by chlorides. In the presence of these chlorides, rust continues to generate in these areas (corrosion pits) and ultimately leads to staining, cracking and spalling of the concrete.
- Duplast CI fortifies the ferric oxide passivating layer prior to the penetration of chlorides. The nitrite ions in Duplast CI will convert ferrous oxide to more resistant ferric oxide, thereby protecting the steel reinforcement from corroding.

### Advantages

Duplast CI is recommended for conventional steel reinforcement as well as pre-stressed or post-tensioned concrete that will be exposed to chlorides from marine environments or deicing salts. Duplast CI will extend the service life of structures by effectively inhibiting corrosion, in areas such as parking garage decks and support structures, bridge decks, marine structures and many others. Duplast CI may also be used in concrete elements where chlorides are added initially to the concrete mix. Duplast CI is a corrosion-inhibiting admixture that provides protection against corrosion in reinforced concrete structures. Duplast CI:

- Extends the service life of reinforced concrete structures.
- Is recommended for use in all types of reinforced concrete, precast and/or pre-stressed concrete as well as ready mix applications.

### Typical Properties

**Color:** Greenish Liquid

**Specific Gravity:** Approx. 1.3

## How to Use

The recommended dosage rate will vary between 10-30 L /m<sup>3</sup> of concrete, depending on the severity of the corrosion environment. In absence of a specified dosage rate, please contact your local Dubond representative. Adjust water content accordingly. Duplast CI may accelerate the setting time. In order to prevent slump loss or finishing characteristics, a set retarding admixture, like Duplast , may be required, especially in warm weather application. The full accelerating effect of Duplast CI may be used for cold weather concreting.

## Mixing

Measure the required quantity manually or by automated dispenser. Add Duplast CI directly into the freshly mixed concrete at the end of the batching cycle. When used in combination with other admixtures, care must be taken to dispense each admixture separately into the mix. Mix water adjustment is necessary to account for the water in Duplast CI and thus, maintain the required water/cementitious ratio. The batch water must be adjusted by reducing 0.839 kg of water per Liter of Duplast CI.

## Compatibility

Duplast CI can be used with Portland cements compliant with ASTM, AASHTO or CRD specifications. It can be used in combination with other Dubond admixtures water reducers, super plasticizers, set retarders and air entrainment agents. Admixtures have to be added separately to the concrete mix in order to deliver the results required. Duplast CI may slightly reduce the entrained air content and a higher dosage of the air entrainment agent may be required.

## Packaging

Duplast CI is supplied in 20kg, 100 & 200kg drums (in bulk on request.)

## Storage and Shelf Life

Duplast CI should be stored above 5°C. If frozen, thaw out and agitate thoroughly to return to normal state before use. Shelf life when stored in dry warehouse conditions between 10°C - 27°C is two years minimum.



### **Dubond Products India Pvt. Ltd.**

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