Concrete Admixtures and Fiber

NITRICOR

Corrosion Inhibitor

DESCRIPTION

NITRICOR is a liquid concrete additive formulated especially to protect structural steel components from corrosion. NITRICOR is used primarily to provide the most effective and technologically advanced and proven protection to extend the service life of concrete structures.

USES

NITRICOR should be used for any concrete placed where it will be exposed to environments which can induce corrosion in reinforcing steel such as:

- Concrete in contact with sea water or near the ocean .
- Docks, pilings and marine structures .
- Concrete parking garages
- Bridges and roads exposed to de-icing salts

ADVANTAGES

- Provides protection against corrosion due to the presence of sea salts and other corrosives .
- NITRICOR is easy to apply using conventional methods .
- Extends the working life of concrete structures .
- Reduces maintenance costs
- Does not affect the propertiesof concrete such as strength, permeability. etc. of the concrete

TECHNICAL INFORMATION

Corrosion is an electrochemical process involving a flow of electrical current. When two metals are submerged in an electrolyte, they develop different electrical polarities. If the two metals are connected together, electrons flow from anode to cathode. Reinforcing steel in concrete can develop the same condition when there are areas exposed to differing levels of humidity, oxygen and various dissolved materials. The presence of impurities, interior forces and other factors within the steel can also create areas of differing polarities within the concrete.

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In alkaline environments such as exist in concrete, corrosion may not occur simply because the pH is higher than 10. This is due to the fact that the steel is sealed within a protective iron layer normally formed by alkaline reaction of the steel. If the pH falls below this level, the protective layer is broken and the steel begins to corrode. One of the most effective and economical ways to minimize or reverse the corrosion process nearly completely is with the use of a corrosion inhibitor such as NITRICOR.

NITRICOR is especially beneficial when the reinforcing steel to be used is clean and free of chloride contamination. The quality of the concrete is very important; the better the quality of the concrete, the longer it will take for the chloride ions to reach the steel and begin corrosion. It is recommended that the concrete meet the specifications outlined in ACI 318 "Building Code Requirements for Reinforced Concrete" and ACI 357 "Guide for the Design and Construction of Fixed Offfshore Concrete Structures ", having to do with protection from corrosion.

Since NITRICOR stabilizes the natural protective layer of oxidation found in structural reinforcing steel in concrete. This significantly reduces the rate of corrosion by making it more difficult for chloride ions to penetrate.

NITRICOR complies with ASTM C-494, Type C.

APPLICATION

NITRICOR is used at the rate of 10 to 30 liters per cubic meter of concrete (2 to 6 gallons per cubic yard of concrete).

The level of protection will increase with the dosage of NITRICOR used.