

# MasterLife<sup>®</sup> CI 222

## Organic corrosion inhibiting admixture

### DESCRIPTION

**MasterLife CI 222** is a state-of-the-art organic migratory corrosion inhibiting admixture formulated to inhibit the corrosion of steel reinforcement in concrete. **MasterLife CI 222** provides two levels of corrosion protection, inhibiting and waterproofing making it the most effective corrosion inhibiting admixture available.

### ADVANTAGES

**MasterLife CI 222** extends the service life of reinforced concrete by slowing the ingress of chlorides and moisture into the concrete and by forming a strong, durable protective film on the reinforcing steel for a second level of corrosion protection. This dual mechanism system makes **MasterLife CI 222** effective with all cement factors, as well as in cracked concrete where the elements that cause corrosion have direct access to the reinforcing steel.

### PACKAGING

**MasterLife CI 222** is available in 208 L drums and bulk if required.

### STANDARDS

ASTM G109, ASTM C494, BS 6920 (confirms concrete containing **MasterLife CI 222** is suitable for contact with water).

### TYPICAL PROPERTIES\*

Appearance	Clear to brownish yellow
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### APPLICATION GUIDELINES

**MasterLife CI 222** may be added with concrete batch water. It should not be mixed with any other admixtures prior to being introduced into the concrete mixer. The use of this admixture does not require changes in normal batching procedures.

**MasterLife CI 222** is recommended for use at a dosage rate of 5 L / m<sup>3</sup> of concrete for all applications and corrosion environments. **MasterLife CI 222** dosed at 5 L / m<sup>3</sup> is formulated to provide optimum corrosion

protection of reinforced concrete structures in severe corrosive environments, and therefore provides excellent corrosive protection in less severe corrosion environments as well.

**MasterLife CI 222** is formulated for use at a single dosage in order to eliminate the confusion and uncertainties related to determining the severity of the corrosive environment and predicting the chloride exposure of the structure.

### How it works

**MasterLife CI 222** functions by inhibiting corrosion at its most critical points. **MasterLife CI 222** lines the pores of the concrete matrix thus waterproofing and slowing the rate at which chlorides and moisture enter the concrete and denying the corrosion process of its two most important components.

**MasterLife CI 222** provides additional protection by migrating and adsorbing onto the reinforcing steel to form a corrosion resistant protective film. This protective film dramatically slows the corrosion process by preventing chlorides from reacting with the reinforcing steel, and by depriving the corrosion process of moisture and oxygen, thus slowing the rate of corrosion once it begins.

### Plastic properties

The plastic properties of concrete are not significantly affected by the use of **MasterLife CI 222**.

### Slump and temperature development

**MasterLife CI 222** has no effect on slump or the temperature development profile of concrete.

### Concrete-steel bond strength

Concrete to steel bond strength is not affected by **MasterLife CI 222**.

### Corrosion inhibiting systems

In order to control corrosion in steel reinforced concrete, the ACI Building Code (ACI 318) requires certain design considerations, such as limiting the water-cementitious materials ratio; providing adequate concrete cover over reinforcing steel; and limiting the initial chloride ion content of the concrete. Additionally, construction practices should be such that a dense, void-free concrete is obtained.

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In addition to the elements of good concrete practice required by the ACI Building Code, Master Builders Solutions recommends a corrosion inhibiting system that inhibits corrosion at multiple levels for maximum protection.

The basis for this system can be established through the use of **MasterLife CI 222** which restricts the ingress of chlorides and moisture and slows the rate of corrosion by forming a protective film on the reinforcing steel. Additional protection can be attained through the use of high-range water-reducing admixtures to provide adequate placeability and consolidation at low water-cement ratios and/or the use of silica fume admixtures to reduce concrete permeability.

## Non-chloride

**MasterLife CI 222** will not initiate or promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanised steel floor and roof systems. Neither calcium chloride nor any chloride-based ingredients are used in the manufacture of **MasterLife CI 222** corrosion inhibiting admixture.

## WATCHPOINTS

Trials must be carried out to ensure mix design meets specified performance criteria.

## STORAGE

Store at ambient temperatures above 2°C but not exceeding 52°C. Ensure that undiluted product does not reach ground water, water course or sewage system.

## HEALTH AND SAFETY

**MasterLife CI 222** is not a fire or health hazard. Spillages should be washed down immediately with cold water. For further information refer to the material safety data sheet.

## QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

## NOTE

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