

# MasterLife<sup>®</sup> CI 220

## Dual Mechanism Corrosion Inhibiting Admixture

### DESCRIPTION

MasterLife CI 220 is a state-of-the-art, dual mechanism, corrosion-inhibiting admixture formulated to inhibit the corrosion of steel in reinforced concrete. MasterLife CI 220 provides dual corrosion protection, for concrete and steel, making it the most effective corrosion-inhibiting admixture available.

### Mechanism of Action

MasterLife CI 220 functions by inhibiting corrosion at its most critical points. It reacts with cement hydration process to form a hydrophobic pore blocking ingredient, that lines the pores of the concrete matrix and reduces capillary suction thus slowing the rate at which chlorides, gases and moisture enter the concrete and denying the corrosion process of its two most important components.

MasterLife CI 220 provides additional protection by 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, thus slowing the rate of corrosion.

### FIELDS OF APPLICATION

**MasterLife CI 220** is recommended for steel reinforced concrete where longer service lives are desired and in situation where the concrete will be exposed to environment.

### FEATURES AND BENEFITS

- Inhibits corrosion at its most critical points
- Reduces the rate at which chlorides, gases and moisture enter the concrete
- Adsorbs onto the reinforcing steel to form a corrosion-resistant protective film
- Extended service life of reinforced concrete structures
- Premium corrosion protection by slowing the ingress of chlorides and moisture into the concrete and forming a strong, durable protective film on the reinforcing steel
- Effective in cracked concrete where the elements that cause corrosion have direct access to the reinforcing steel
- Increased sulfate resistance

- Normal set product that can be easily used in elevated temperatures.

### TYPICAL PERFORMANCE DATA

Aspect	Clear to slightly cloudy liquid
Relative Density	1.00 ± 0.02 at 25°C

### Plastic Properties

The plastic properties of concrete are not significantly affected by the use of **MasterLife CI 220**

### Slump and Temperature Development

**MasterLife CI 220** has no effect on slump or the temperature development profile of concrete.

### Hardened Properties

The hardened properties of concrete are not significantly affected by the use of **MasterLife CI 220**

### 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 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 dense, void-free concrete is obtained.

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.

Additional protection can be attained through the use of a high-range water-reducing admixture to provide adequate place-ability and consolidation at low water-cement ratios and/or the use of MasterLife SF – (silica fume) to reduce concrete permeability.

### TEST CERTIFICATION/APPROVALS

- BS 1881-122
- ASTM G 109
- IS 9103
- ASTM C 1202

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## APPLICATION

**MasterLife CI 220** 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.

## DOSAGE

**MasterLife CI 220** is recommended for use at dosage rate of 3 to 5 L/m<sup>3</sup> of concrete depending upon the severity of the corrosion environment. In case of special requirements, a dosage greater than 5L per cubic metre can also be used. Please contact your local Master Builders Solutions representative for further details

**MasterLife CI 220** dosage 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.

The water content of **MasterLife CI 220** admixture also contributes to the consistency of the concrete mixture and the hydration of the cementitious materials.

## COMPATIBILITY

**MasterLife CI 220** admixture may be used with Portland cements and mineral admixtures approved under ASTM, AASHTO, or CRD specifications. It is compatible with other chemical admixtures, including water reducers, superplasticizers, retarders and air entrainers. Chemical admixtures should be added separately to the concrete to ensure desired results.

## PACKAGING

**MasterLife CI 220** is available in 1L, 5L, 20L 235 Kg drums.

## SHELF LIFE

**MasterLife CI 220** can be stored for 9 months if stored at temperatures above 5 °C and below 45 °C, in tightly sealed original drums. If found to be frozen, thaw it and reconstitute the product by stirring.

## PRECAUTIONS

**Health:** **MasterLife CI 220** does not contain any hazardous substances requiring labelling.

It is safe for use with standard precautions followed in the construction industry, such as use of hand gloves, safety goggles, etc.

For detailed Health, Safety and Environmental Recommendations, please consult and follow all instructions on the product Material Safety Data Sheet.

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