

# MasterLife® CI 222

## Corrosion-Inhibiting Admixture

### Description

MasterLife CI 222 admixture is a patented state-of-the-art corrosion-inhibiting admixture formulated to inhibit the corrosion of steel in reinforced concrete. MasterLife CI 222 admixture provides two levels of corrosion protection, making it the most effective corrosion-inhibiting admixture available.

MasterLife CI 222 admixture meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

### Applications

Recommended for use in:

- All types of reinforced concrete, including precast/prestressed and post-tensioned applications
- Parking garages, bridge decks, marine structures, slabs, floors and other reinforced concrete applications requiring corrosion protection against chlorides from de-icing salts or marine exposure

### Features

- Inhibits corrosion at its most critical points
- Reduces the rate at which chlorides and moisture enter the concrete
- Adsorbs onto the reinforcing steel to form a corrosion-resistant protective film

### Benefits

- 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 is easily used in elevated temperatures

### Performance Characteristics

**Plastic Properties:** The plastic properties of concrete are not significantly affected by the use of MasterLife CI 222 admixture. However, a higher than normal dosage of air-entraining admixture may be required to achieve desired air contents.

**Hardened Properties:** Depending on the ingredients and proportions of a concrete mixture, a decrease in compressive strength may be experienced with MasterLife CI 222 admixture, typically in the range of 5 to 10 percent. Please consult your local sales representative for recommended concrete mixture adjustments prior to the use of MasterLife CI 222 admixture. Other hardened properties of concrete are not significantly affected by the use of MasterLife CI 222 admixture.

**Slump and Temperature Development:** MasterLife CI 222 admixture 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 admixture.

## Guidelines for Use

**Corrosion-Inhibiting System:** In order to control corrosion in reinforced concrete, the ACI 318 (ACI 318M) Building Code Requirements for Structural Concrete and Commentary 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.

In addition to the elements of good concrete practice required by the ACI 318 (ACI 318M), BASF recommends a corrosion-inhibiting system that inhibits corrosion at multiple levels for maximum protection.

The use of MasterLife CI 222 admixture restricts the ingress of chlorides and moisture and additionally slows the onset and rate of corrosion by forming a protective film on the reinforcing steel. Additional protection can be attained through the use of a high-range water-reducing admixture such as MasterGlenium® admixture to provide adequate placability and consolidation at low water-cementitious materials ratios and/or the use of MasterLife® SF 100 silica fume to further reduce concrete permeability.

**Dosage:** MasterLife CI 222 admixture is recommended for use at a dosage of 1 gal/yd<sup>3</sup> (5 L/m<sup>3</sup>) of concrete for all applications and corrosive environments.

MasterLife CI 222 admixture dosed at 1 gal/yd<sup>3</sup> (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 corrosion protection in less severe corrosion environments as well.

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

**Mixing:** MasterLife CI 222 admixture may be added with concrete batch water. It should not be mixed with any other admixtures prior to being introduced into the concrete mixer. Depending on local materials, mixing efficiency and other conditions, the use of this admixture may require changes in normal batching procedures to facilitate air entrainment.

## Product Notes

**Corrosivity – Non-Chloride, Non-Corrosive:** MasterLife CI 222 admixture is a corrosion-inhibiting admixture and will neither initiate nor promote corrosion of reinforcing and prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of MasterLife CI 222 admixture.

## Storage and Handling

**Storage Temperature:** Store at ambient temperatures above 35 °F (2 °C) but not exceeding 125 °F (52 °C). Precautions should be taken to protect MasterLife CI 222 admixture from freezing. If product freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

**Shelf Life:** MasterLife CI 222 admixture has a minimum shelf life of 9 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterLife CI 222 admixture has been exceeded.

## Packaging

MasterLife CI 222 admixture is available in 52.6 gal (199 L) drums, 260.7 gal (987 L) totes, and by bulk delivery.

## Related Documents

Safety Data Sheets: MasterLife CI 222 admixture

## Additional Information

For additional information on MasterLife CI 222 admixture or its use in developing a concrete mixture with special performance characteristics, contact your local sales representative.

*The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.*

## Limited Warranty Notice

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