



The Chemical Company

RHEOCRETE[®] 222+

Organic corrosion inhibiting admixture

Description

RHEOCRETE[®] 222+ is a state-of-the-art corrosion inhibiting admixture formulated to inhibit the corrosion of steel reinforcement in concrete. RHEOCRETE[®] 222+ provides two levels of corrosion protection, making it the most effective corrosion inhibiting admixture available.

Advantages

RHEOCRETE[®] 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 RHEOCRETE[®] 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

RHEOCRETE[®] 222+ is available in 208 litre drums and bulk if required.

Standards

ASTM G-109

How it works

RHEOCRETE[®] 222+ functions by inhibiting corrosion at its most critical points. RHEOCRETE[®] 222+ lines the pores of the concrete matrix thus slowing the rate at which chlorides and moisture enter the concrete and denying the corrosion process of its two most important components.

RHEOCRETE[®] 222+ 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 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 RHEOCRETE[®] 222+.

Slump and temperature development

RHEOCRETE[®] 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 RHEOCRETE[®] 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.

In addition to the elements of good concrete practice required by the ACI Building Code, BASF 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 RHEOCRETE[®] 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.



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Dosage

RHEOCRETE[®] 222+ is recommended for use at a dosage rate of 5 litre / m³ of concrete for all applications and corrosion environments. RHEOCRETE[®] 222+ dosed at 5 litre / m³ 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.

RHEOCRETE[®] 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.

Directions for use

RHEOCRETE[®] 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.

Watchpoints

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

Temperature precaution

Store at ambient temperatures above 2°C but not exceeding 52°C. Precautions should be taken to protect RHEOCRETE[®] 222+ from freezing. If product freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurised air for agitation.

Non-chloride

RHEOCRETE[®] 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 RHEOCRETE[®] 222+ corrosion inhibiting admixture.

Safety precautions

RHEOCRETE[®] 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.

Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

Quality and care

All BASF Products are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards of ISO 9001 and BASF ESHQ recommendations. Saudi BASF – 12/2007

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