

Advanset RCI

Calcium Nitrite Corrosion-Inhibiting, Non-Chloride Accelerating Admixture for Concrete

General Description

Advanset RCI is a calcium nitrite liquid corrosion-inhibiting admixture for concrete containing steel reinforcement. Advanset RCI admixture chemically retards the onset of corrosion action of chlorides on reinforcing steel and will increase a structure's service years. Advanset RCI has a minimum of 30% calcium nitrite by mass, weighs approximately 10.6 lbs./gallon, and is exactly the same chemical makeup as other 30% calcium nitrite corrosion-inhibiting admixtures.

Uses

Advanset RCI is an effective corrosion inhibitor for all types of steel reinforced concrete. Advanset RCI is recommended for use in posttensioned, precast, and prestressed concrete applications. Also, it is recommended for use in parking garages, marine structures, bridge decks, and any other project that requires corrosion protection from de-icing salts or chloride exposure.

Features / Advantages

- Extends the service years of reinforced concrete
- Provides effective corrosion protection to the reinforcing steel in the concrete from the presence of chlorides (de-icing salts)
- Offsets the corrosive effects of concrete ingredients that have exceeded normal chloride limits (admixed chlorides)
- In cold weather, concrete setting times and strength development are accelerated without the incorporation and added cost of a non-chloride accelerator.
- Aids in prevention of concrete from freezing at higher dosages
- Calcium nitrite has a twenty two year history of testing and research on the successful effectiveness as a corrosion inhibitor in concrete.

Dosage

Advanset RCI is recommended for use at a dose of 2.0 to 6.0 gallons/cubic yard of concrete (10.0 to 30.0 L/cubic meter). The dosage will depend on the anticipated chloride loading of the structure and how severe the corrosive environment is.

Calcium nitrite must be dosed in quantities equal to or greater than the chlorides for the entire life of the structure. This requires dosing calcium nitrite in accordance with the anticipated chloride exposure of the concrete.

For assistance with determining anticipated chloride exposure and specific recommended dosages of Advanset RCI, consult with your local Riteks technical service representative. This will assure that the proper dosage will provide the corrosion protection you expect. They will follow the current Federal Highway Administration's corrosion potential threshold recommendation.

For applications involving concrete-making ingredients that exceed normal chloride limits, Advanset RCI will inhibit the potentially corrosive affects of these ingredients. Consult your local Riteks technical service representative for recommended dosages.

Specifications

Conforms to:

ASTM C 494 Type C
AASHTO M 194 Type C
CRD C 87 Type C

Packaging

55-Gal Drums | 275-Gal Tote |
Bulk Delivery.

Health and Environmental Data

Before handling or using this product please refer to the Safety Data Sheet for complete health, safety and environmental information. Dispose of waste in accordance with local, state and federal regulations.



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a Sample

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Trial Mix Requirement

It is recommended strongly that trial mixes be run prior to construction. This will allow contractor and producer to determine mix adjustments, amounts of other admixtures, and batch sequencing to provide concrete mix that will meet requirements of project. Because different cements respond differently and setting times will be accelerated with the use of Advanset RCI, it is very important to thoroughly test and evaluate slump retention, air, and initial set.

Technical Note

Advanset RCI does not contain calcium chloride or any chloride based components. It will not promote or contribute to corrosion of reinforcing steel in concrete.

Advanset RCI additions to concrete can slightly increase the coulombs present, but do not increase the chloride permeability of the concrete. Therefore, the AASHTO T277 Rapid Chloride Ion Permeability Test method can produce misleading results when calcium nitrite has been added to the concrete.

Air Entrainment

Advanset RCI, when used within recommended dosage rates, may reduce the entrained air content moderately. It may require increasing the dosage of the air entrainment to compensate. Specifications for air content, with concrete containing Advanset RCI, generally require 6.5% +/- 1.5% air in the concrete for optimum durability.

Acceleration of Set Time

Within the recommended corrosion inhibitor dosage range, Advanset RCI, will accelerate the initial set time of the concrete and possibly increase slump loss. The incorporation of a retarder will extend setting time and provide more normal slump loss characteristics. In cold weather, a retarder may not be necessary, since the accelerating affects of the Advanset RCI probably will be desirable in the mix.

Dosage Rate for Acceleration

Advanset RCI is recommended for use at a dosage rate of 8 to 90 fluid ounces per 100 pounds (522 to 5870 mL per 100kg) of cementitious material. The dosage will depend on the anticipated cold weather conditions.

Mix Water Adjustment

A water adjustment must be made to allow for the water in the Advanset RCI. This will be necessary to maintain the specified water/cementitious ratio.

The water in the mix should be reduced by as much as the water added through the addition of the corrosion inhibitor. The adjustment factor is 7.2 lbs of water for each gallon of Advanset RCI used.

It is recommended that a Riteks high-range water reducer be incorporated to maintain a workable slump in low water/cementitious ratio concrete mixes.

Storage

Advanset RCI may freeze at temperatures of -5 F (-3 C).

Although freezing does not harm Advanset RCI corrosion inhibiting and strength gaining characteristics, precautions should be taken to protect it from freezing.

If it should freeze, thaw and reconstitute with mechanical agitation.

Do Not Use Pressurized Air For Agitation.

Shelf Life

18 Months



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