
RUSSTECH[®]

RUSSTECH RCI

*CALCIUM NITRITE
CORROSION-INHIBITING
NON-CHLORIDE
ACCELERATING
ADMIXTURE FOR CONCRETE*

DESCRIPTION:

RUSSTECH RCI is a calcium nitrite liquid corrosion-inhibiting admixture for concrete containing steel reinforcement. **RUSSTECH RCI** admixture chemically retards the onset of corrosion action of chlorides on reinforcing steel and will increase a structure's service years. **RUSSTECH 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.

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

COMPATIBILITY:

RUSSTECH RCI is compatible with all types Portland cement, class C and F fly ash, silica fume, fibers, approved air entraining, water reducing, and super plasticizing admixtures. For best results, each admixture must be introduced separately into the concrete mix.

USES:

RUSSTECH RCI is an effective corrosion inhibitor for all types of steel reinforced concrete. **RUSSTECH RCI** is recommended for use in post-tensioned, 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.

SPECIFICATIONS:

Conforms to ASTM C 494 Type C
AASHTO M 194 Type C
CRD C 87 Type C
All other Federal and State specifications

DOSAGE RATE FOR CORROSION:

RUSSTECH 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 **RUSSTECH RCI**, consult with your local RussTech 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, **RUSSTECH RCI** will inhibit the potentially corrosive affects of these ingredients. Consult your local RussTech technical service representative for recommended dosages.

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 **RUSSTECH RCI**, it is very important to thoroughly test and evaluate slump retention, air, and initial set.

TECHNICAL NOTE:

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

RUSSTECH 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:

RUSSTECH 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 **RUSSTECH 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, **RUSSTECH 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 **RUSSTECH RCI** probably will be desirable in the mix.

DOSAGE RATE FOR ACCELERATION:

RUSSTECH 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 **RUSSTECH 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 **RUSSTECH RCI** used.

It is recommended that a high-range water reducer such as **SUPERFLO 443**, **SUPERFLO 2000RM**, or **SUPERFLO 2000SCC** be incorporated to maintain a workable slump in low water/cementitious ratio concrete mixes.

STORAGE:

RUSSTECH RCI may freeze at temperatures of -5 F (-3 C). Although freezing does not harm **RUSSTECH 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.**

PACKAGING:

55-gallon drums, 275-gallon tote, and bulk delivery.

SHELF LIFE:

18 months

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"We Add The Difference"