

PRODUCT DATA SHEET

Sika® CNI

CORROSION INHIBITING ADMIXTURE

DESCRIPTION

Sika® CNI is a calcium nitrite-based admixture designed to inhibit the corrosion of steel in reinforced concrete. Sika® CNI contains a minimum of 30 % calcium nitrite by mass and meets the requirements of ASTM C 1582, Corrosion Inhibiting Admixture and ASTM C494, Type C, Accelerating Admixture.

USES

In the high alkalinity of concrete, reinforcing steel builds up a natural passivation layer. This layer protects the steel from corrosion. This passive ferric oxide layer however can be damaged by the presence of chlorides and combined with the presence of moisture and oxygen which will lead to corrosion of the steel.

Sika® CNI will help oxidize the steel to form ferric oxide, which resists chloride attack. This reduces the areas of ferrous oxide ions that are susceptible to attack by chlorides. Ferrous oxide creates a ferrous oxide complex (rust), if attacked by chlorides. In the presence of these chlorides, rust continues to generate in these areas (corrosion pits) and ultimately leads to staining, cracking and spalling of the concrete.

Sika® CNI fortifies the ferric oxide passivating layer prior to the penetration of chlorides. The nitrite ions in Sika® CNI will convert ferrous oxide to more resistant ferric oxide, thereby protecting the steel reinforcement from corroding.

CHARACTERISTICS / ADVANTAGES

Sika® CNI is recommended for conventional steel reinforcement as well as prestressed or post-tensioned concrete that will be exposed to chlorides from marine environments or deicing salts. Sika® CNI will extend the service life of structures by effectively inhibiting corrosion, in areas such as parking garage decks and support structures, bridge decks, marine structures and many others.

Sika® CNI may also be used in concrete elements where chlorides are added initially to the concrete mix.

Sika® CNI is a corrosion-inhibiting admixture that provides protection against corrosion in reinforced concrete structures. Sika® CNI:

- Extends the service life of reinforced concrete structures.
- Is recommended for use in all types of reinforced concrete, precast and/or prestressed concrete as well as ready mix applications.

PRODUCT INFORMATION

Packaging	200 L drum
Appearance / Colour	Clear light yellowish liquid
Shelf Life	Shelf life when stored in dry conditions, under shed between 10 °C and 27 °C is 12 months.
Storage Conditions	Sika® CNI should be stored above 5 °C. If frozen, thaw out and agitate thoroughly to return to normal state before use.
Specific Gravity	Approx. 1.3

APPLICATION INFORMATION

Recommended Dosage

The recommended dosage rate will vary between 10–30 l/m³ of concrete, depending on the severity of the corrosion environment. In absence of a specified dosage rate, please contact your local Sika representative. Adjust water content accordingly. Sika® CNI may accelerate the setting time. In order to prevent slump loss or finishing characteristics, a set retarding admixture, like Plastiment®, may be required, especially in warm weather application. The full accelerating effect of Sika® CNI may be used for cold weather concreting.

Compatibility

Sika® CNI can be used with Portland cements compliant with ASTM, AASHTO or CRD specifications. It can be used in combination with other Sika admixtures including microsilica, water reducers, superplasticizers, set retarders and air entrainment agents. Admixtures have to be added separately to the concrete mix in order to deliver the results required. Sika® CNI may slightly reduce the entrained air content and a higher dosage of the air entrainment agent may be required.

APPLICATION INSTRUCTIONS

DISPENSING

Measure the required quantity manually or by automated dispenser. Add Sika® CNI directly into the freshly mixed concrete at the end of the batching cycle. When used in combination with other admixtures, care must be taken to dispense each admixture separately into the mix.

Mix water adjustment is necessary to account for the water in Sika® CNI and thus, maintain the required water/cementitious ratio. The batch water must be adjusted by reducing 0.839 kg of water per L of Sika® CNI.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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Product Data Sheet
Sika® CNI
July 2019, Version 01.01
021403051000000004

SikaCNI-en-MY-(07-2019)-1-1.pdf