BUILDING TRUST

PRODUCT DATA SHEET

SikaRapid®-330 R

CORROSION-INHIBITING AND NON-CHLORIDE ACCELERATOR ADMIXTURE

DESCRIPTION

SikaRapid®-330 R is a calcium nitride-based corrosion-inhibiting admixture for steel reinforced concrete. SikaRapid®-330 R contains minimum 30% active ingredients by mass and meets ASTM C494 requirements for type C, Accelerating Admixtures.
In the alkaline environment of concrete, a natural passive ferric oxide layer naturally forms on the surface of embedded reinforcing steel and protects the steel from corrosion. This passive oxide layer may break down in the presence of chlorides, oxygen and moisture resulting in corrosion of steel.
SikaRapid®-330 R delays corrosion by re-passivating defects on the oxide / steel surface. These defects are ferrous oxide ions attack the ferrous ions, they combine to create a ferrous chloride complex (rust) and initiate pitting corrosion on the reinforcing steel. If untreated, chloride ions continue to attack newly exposed ferrous ions and form additional expansive corrosion products leading to staining, cracking and spalling of the concrete.
Nitride ions contained in SikaRapid®-330 R are effective in preventing ferrous chloride complex formation by reacting with defective ferrous oxide ions prior to chloride attack and reforming the passive layer. Nitride ions surround the defective ferrous oxide ion and convert it to a more stable ferric ion species less susceptible to corrosion. This oxidation reaction serves to re-passivate the reinforcing steel and re-establish the barrier between the steel and chlorides that initiate corrosion.

USES

- All types of steel reinforced concrete, including precast/prestressed and post-tensioned concrete applications.
- Parking garages, bridge decks, marine structures, slabs, floors and other reinforced concrete applications requiring corrosion protection against chlorides from deicing salts or marine exposure.
- Strength-on-demand concrete, such as high early strength, rapid setting concrete, fast open traffic concrete, etc.

FEATURES

SikaRapid®-330 R may also be used to offset the potentially corrosive effects of the chloride-bearing concrete-making ingredients, and in applications where the initial chloride ion content of the concrete may exceed code requirements or other specified chloride limits.
SikaRapid®-330 R provides plastic and hardened concrete properties consistent with an ASTM C494 Class C admixture. The extension in service life due to the product is a function of the product dosage, the chloride exposure level, structure design factors and the transport properties of the concrete. The following tables illustrate the effect of SikaRapid®-330 R dosage and chloride exposure level per chloride protection limit:

Dosage (liter/m³)	With chloride bearing materials (kg/m³)	All other applications (kg/m³)
5	1.2	-
10	2.4	3.6
15	3.6	5.9
20	4.8	7.7
25	6.0	8.9
30	7.2	9.5

SikaRapid®-330 R is identical in composition and mechanism to other commercially available 30% calcium nitride corrosion-inhibiting admixtures; and at equal dosage rates, provides similar performance and corrosion protection. The water content of SikaRapid®-330 R is approximately 0.875 kg/L. This water contributes to the consistency of the concrete mixture and the hydration of the cementitious materials. The water contributed by SikaRapid®-330 R should be used in calculation of the water per cementitious material

ratio of the concrete.
SikaRapid®-330 R will not initiate or promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any chloride-based ingredients are used in the manufacture of SikaRapid®-330 R. Concrete setting times may be accelerated with the use of SikaRapid®-330 R.

If desired, a retarding or hydration control admixture may be added to the concrete mixture to offset the acceleration effects of SikaRapid®-330 R. SikaRapid®-330 R is recommended for steel reinforced concrete where longer service lives are desired and it is expected that the concrete will be exposed to environmental chlorides from deicing salts or marine exposure.

PRODUCT INFORMATION

Packaging	20 L can 1 000 L bulk delivery
Shelf life	12 months from date of production if stored properly in undamaged, unopened, original sealed packaging.
Storage conditions	Store in dry conditions at temperatures between +5 °C and +35 °C. Protect from direct sunlight and frost.
Appearance	Liquid

TECHNICAL INFORMATION

Concreting guidance	The standard rules of good concreting practice, concerning production and placing, are to be followed. Laboratory trials before concreting on site are strongly recommended when using a new mix design or producing new concrete components. Fresh concrete must be cured properly and as early as possible.

APPLICATION INFORMATION

Recommended dosage	5.0 – 30.0 liter/m3 of concrete (As a corrosion inhibitor). Depending upon the severity of the corrosion environment and the anticipated chloride loading of the structurer. 5.0 – 30.0 liter/m3 of concrete (As an accelerator). Depending on the mix design of concrete and ambient temperature, pretrials are recommended to determine actual dosage.
Compatibility	SikaRapid®-330 R may be combined with the following products: ▪ Sika® Plastiment® ▪ Sika® ViscoCrete® ▪ Sika ViscoFlow® ▪ SikaFume® ▪ Sika® Aer Pre-trials are recommended and mandatory if combinations with the above products are required. Please consult to our Technical Service Department.

BASIS OF PRODUCT DATA

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

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

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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