



PRODUCT DATA SHEET

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CAST-IN-PLACE CONCRETE

Sika FerroGard®-901

CORROSION INHIBITING ADMIXTURE

Description	Sika FerroGard®-901 is a liquid admixture formulated for concrete and mortar to protect embedded reinforcing steel from corrosion, and to provide a cost effective means to extend the service life of concrete structures.
Where to Use	<p>Sika FerroGard®-901 is recommended for all steel reinforced concrete or repair mortars and grouts exposed to corrosive environments. Typical uses are:</p> <ul style="list-style-type: none"> ▪ Concrete bridges, highways and pavements exposed to de-icing salts. ▪ Concrete marine structures operating in chloride environments. ▪ Concrete tunnels, infrastructure or retaining walls. ▪ Concrete in industrial plants where corrosive substances are present. ▪ Concrete parking structures and decks. ▪ Concrete piers, piles, caissons and dock structures. <p>Sika FerroGard®-901 specifically provides protection from chloride and carbonation induced corrosion.</p>
Advantages	<ul style="list-style-type: none"> ▪ Multifunctional inhibitor, active at both anodic and cathodic sites of a corrosion cell. ▪ High vapour pressure characteristic of inhibitor results in migration through concrete to the steel reinforcement. ▪ High affinity for steel enables displacement of chloride ions from metal surfaces. ▪ Forms a physical, high integrity and absorbed layer on the surface of embedded steel. ▪ Continuous barrier protects reinforcement from corrosion caused by loss of alkalinity. ▪ Creates an environment which restricts influence of moisture and oxygen in concrete. ▪ Material performance is supported by significant test data and track record. <p>Sika FerroGard®-901 offers owners, specifiers, port authorities, transport ministries and engineers a proven technology in corrosion inhibition that is easily added to ready-mix or precast concrete and repair mortars or grouts. This dual action inhibitor dramatically delays the initiation of corrosion and greatly reduces ongoing corrosion activity.</p> <p>Sika FerroGard®-901:</p> <ul style="list-style-type: none"> ▪ Extends the service life of concrete structures and reduces maintenance costs. ▪ Does not contain calcium nitrite; is non-hazardous and is environmentally friendly. ▪ Does not affect the rheological properties of plastic concrete; no changes in mix design or placement operations are required. ▪ Does not affect the properties of hardened concrete such as compressive and flexural strengths, permeability, etc. ▪ Reduces the harmful effects of steel corrosion which cause concrete cracking, staining, spalling and ultimate loss of structural integrity. ▪ Provides corrosion inhibition in the presence of chlorides, de-icing and marine salts. ▪ Enhances the durability of repair mortars and grouts in corrosive environments.
Technical Data	
Packaging	20 L (5.28 US gal.) pail
Colour	Green
Shelf Life	12 months in original, unopened and undamaged containers when stored at 23 °C (73 °F). Sika FerroGard®-901 should be stored dry, at temperatures above 2 °C (36 °F) and protected from freezing and direct sunlight. If frozen, slowly thaw and stir/agitate thoroughly to return to its original state before use.
Chemical Base	Nitrogen containing organic and inorganic inhibitors
Mix Ratio/Dosage	Sika FerroGard®-901 is recommended for use at the rate of 10 L/m ³ (2.6 US gal./1.308 yd ³) of concrete. For extreme high chloride and severe marine exposure, it is recommended to increase the dosage rate to 15 L/m ³ (4 US gal./1.308 yds ³) of concrete. Sika FerroGard®-901 is recommended for use with mortars and grouts at a dosage of up to 200 mL per 25 kg (6.8 US fl. oz. per 55 lb) of powder.

Properties at 23 °C (73 °F) and 50 % R.H.

Performance - Key Criteria	Performance Level	Test Method/Institute
Corrosion Inhibition	Delays the onset of corrosion and reduces rate by 65 % versus control specimen after 400 days	Cracked concrete beam test (ASTM G109 adaptation)
Protective Layer on Steel	Forms a high integrity protective layer on reinforcing steel of at least 100 E thickness	X-ray Photon Spectroscopy & Secondary Ion Mass Spectroscopy/ Brundle & Associates and University of Heidelberg
Displacement of Chlorides from Steel Surfaces	Forms a continuous film on the reinforcing steel and displaces chloride ions	X-ray Photon Spectroscopy & Secondary Ion Mass Spectroscopy/ Brundle & Associates and University of Heidelberg
pH Value	10 ± 1	
Chloride Content	> 0.1 %	
Specific Gravity	1.06 kg/L	
VOC Content	21.2 g/L	
Chemical Resistance	Consult Sika Canada	

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

HOW TO USE**Mixing**

Sika FerroGard®-901 is mixed with the gauging water or added at the same time into the concrete, mortar or grout mixer for the best results. It may also be added to the concrete in the Ready-Mix truck, where being used, at the point of discharge. In this case, an additional mixing time of at least 1 minute per m³ of concrete must be observed. Before discharging, check the concrete, mortar or grout visually for uniform consistency.

The quantity of Sika FerroGard®-901 in the concrete mix design or mortar/grout mix must be taken into consideration when determining the quantity of water for a specific concrete W/C ratio or a proprietary mortar or grout water content.

Clean Up

Use personal protective equipment (chemical resistant goggles/gloves/clothing). While avoiding direct contact, contain and collect spilled material or remove excess product and place in a suitable, sealed container. Dispose of spilled (or excess) product and container in accordance with applicable local, provincial or federal environmental regulations.

Limitations

- Do not premix with dry cement or mortar powders. When used in combination with other admixtures, care must be taken to dispense each admixture separately into the mix.
- Do not premix with air entraining agent.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

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, within their shelflife. 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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

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