



PRODUCT DATA SHEET

Sika® FerroGard®-903

Penetrating, corrosion inhibiting, impregnation coating for hardened concrete

PRODUCT DESCRIPTION

engineering structures

Sika® FerroGard®-903 is a corrosion inhibiting impregnation coating for hardened concrete surfaces. It is designed to penetrate the surface and then to diffuse in vapor or liquid form to the steel reinforcing bars embedded in the concrete. Sika® FerroGard®-903 forms a protective layer on the steel surface which inhibits corrosion caused by the presence of chlorides as well as by carbonation of concrete.

How it works

Sika® FerroGard®-903 is a combination of amino alcohols, and organic and inorganic inhibitors that protects both the anodic and cathodic parts of the corrosion cell. This dual action effect dramatically delays the initiation of corrosion and greatly reduces the overall corrosion activity. Sika Sika® FerroGard®-903 protects the embedded steel by depositing a physical barrier in the form of a protective layer on the surface of the steel reinforcement. This barrier inhibits corrosion of the steel.

USES

Sika® FerroGard®-903 is recommended for all steel-reinforced, prestressed, precast, post tensioned or marine concrete. Use of Sika® FerroGard®-903:

- Steel-reinforced concrete, bridges and highways exposed to corrosive environments (deicing salts, weathering)
- Building facades and balconies
- Steel-reinforced concrete in or near a marine environment
- Parking garages
- Piers, piles, and concrete dock structures
- As part of Sika's system approach for buildings and civil

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CHARACTERISTICS / ADVANTAGES

Sika® FerroGard®-903 offers owners, specifiers, port authorities, DOTs, and engineers, a new technology in corrosion inhibition that can easily be applied to the surface of existing concrete to extend the service life of any reinforced concrete structure.

- Protects against the harmful effects of corrosion by penetrating the surface of even the most dense concrete and diffusing to the steel to inhibit corrosion.
- Enhances the durability of reinforced concrete.
- Does not require concrete removal.
- Environmentally sound.
- Does not contain calcium nitrite.
- Easily applied by either spray or roller to all existing reinforced concrete.
- Can be applied to reinforced concrete that already exhibits corrosion.
- Adds additional benefits when used prior to protective coatings in concrete restoration systems.
- Water based for easy handling and application.
- Not a vapor barrier; allows vapor diffusion.
- FerroGard has been proven effective in both laboratory (ASTM G109/Cracked Beams) and field analysis.
- ANSI/NSF Standard 61 potable water approved

PRODUCT INFORMATION

Packaging	5 gallon pails with spout, 55 gallon drums.
Appearance / Color	Pale Yellow
Shelf Life	18 months minimum in original, unopened container
Storage Conditions	Store at 40–95 °F (4–35 °C). Protect from freezing. If frozen, discard.
Density	1.13 (9.4 lbs./gal.)
pH-Value	11 (±1)
Viscosity	15 cps

TECHNICAL INFORMATION

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Penetration Depth

Key Criteria	Performance Level	Test Method/Institute
Corrosion Inhibition	Sika® FerroGard®-903 corrosion inhibitors delay the onset of corrosion and reduce the rate of corrosion by 65% versus control specimen after 1 year.	1
Penetration Rate in hardened concrete	Sika® FerroGard®-903 penetrates independently of orientation (horizontal, vertical, overhead) at a rate of 1/10 to 4/5 inches (2.5 to 20 mm) per day, depending on the density of the concrete.	2
Depth of Penetration	Sika® FerroGard®-903 penetrates up to 3 inches (76 mm) in 28 days.	2
Protective layer on steel	Sika® FerroGard®-903 forms a protective layer on the reinforcing steel of high integrity measured at as much as 100 Å in thickness	3
Displacement of chlorides from steel surface	Sika® FerroGard®-903 forms a continuous film on the reinforcing steel and displaces chloride ions from the steel surface.	3
Corrosion Rate Field Monitoring	Reduction of corrosion rates in excess of 65%.	4

Test Method/Institute:

¹ Cracked Concrete Beam Test (adapted from ASTM G109)

² Secondary Neutron Mass Spectroscopy (SNMS) / Institute for Radiochemistry, Karlsruhe (Germany), Prof. Dr. J. Goschnick.

³ X-ray Photon Spectroscopy (XPS) and Secondary Ion Mass Spectroscopy (SIMS) / Brundle and Associates, San Jose, CA and University Heidelberg (Germany), Prof. M. Grunze.

⁴ Performance of Corrosion Inhibitors in Practice, Graeme Jones, C-Probe Technologies Ltd., 2000

APPLICATION INFORMATION

Coverage

For normal concrete, application is 200 ft.²/gal. each coat. A minimum of two coats is always recommended. For dense concrete, application may exceed 300 ft.²/gal. Therefore, more than two coats may be required to achieve the **total application rate: 100 ft.²/gal.**

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Before applying Sika® FerroGard®-903 be sure the

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BUILDING TRUST



