

# CHEMFIT FERROGARD 903

## Aqueous Impregnation Forming a Protective Monomolecular Layer on Rebars to Prevent Corrosion – To Protect Concrete Rebars from Steel Corrosion Above and Below Ground

### PRODUCT DESCRIPTION

**ChemFit FerroGard 903** is a high-performance, aqueous impregnation corrosion inhibitor specifically formulated to protect reinforcing steel (rebar) in concrete structures. This advanced technology forms a protective monomolecular layer on the surface of rebars, preventing corrosion initiation and propagation. The aqueous, low-viscosity formulation penetrates deeply into concrete, migrating through pores and capillaries to reach the reinforcement. It is effective for both above ground and below ground applications, providing long-term protection against chloride-induced corrosion, carbonation, and other aggressive attack mechanisms. This product is designed for new construction as a preventative treatment and for existing structures as a remedial corrosion protection solution.

### PRIMARY APPLICATIONS

**ChemFit FerroGard 903** is recommended for use in conditions such as:

- Protect rebar in new concrete construction (above and below ground)
- Remedial corrosion protection for existing reinforced concrete structures
- Bridge decks, piers, and abutments subject to deicing salts
- Parking structures and ramps in cold climates
- Marine structures and coastal infrastructure
- Tunnels and underground structures
- Industrial concrete floors with embedded steel
- Concrete repair and rehabilitation projects
- Structures exposed to aggressive groundwater
- Foundations and retaining walls below ground
- Water and wastewater treatment facilities
- Chemical plants and industrial facilities

### KEY FEATURES AND BENEFITS

- **Aqueous formulation** – Low VOC; environmentally friendly; easy to apply
- **Monomolecular layer protection** – Forms protective film on rebar surface at molecular level
- **Deep penetration** – Migrates through concrete pores and capillaries to reach rebar
- **Effective above and below ground** – Suitable for all exposure conditions
- **Prevents chloride-induced corrosion** – Increases corrosion initiation threshold
- **Protects against carbonation** – Extends service life of carbonated concrete
- **Easy application** – Spray or roller applied to concrete surface

- **No surface buildup** – Does not alter concrete appearance or breathability
- **Compatible with coatings** – Can be applied under or over protective coatings
- **Long lasting protection** – Provides extended service life for reinforced concrete
- **Non-toxic** – Safe for applicators and environment
- **Cost-effective** – Low application rate; high coverage

## PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Clear to slightly hazy liquid
Color	Colorless to light straw
Form	Ready-to-use liquid
Specific Gravity	1.00 – 1.05 at 25°C
pH Value	7.0 – 9.0
VOC Content	Low (aqueous formulation)
Freezing Point	0°C (protect from freezing)
Viscosity	Low (water-like)
Penetration Depth	Up to 50 mm (depending on concrete quality)
Application Temperature	+5°C to +40°C
Coverage (min)	0.3 kg/m <sup>2</sup>
Coverage (typical)	0.5 kg/m <sup>2</sup>

## PERFORMANCE CHARACTERISTICS

Property	Value
Corrosion Protection	≥ 90% reduction in corrosion rate
Chloride Threshold Increase	2 – 3 times vs. untreated concrete
Carbonation Protection	Extends carbonation initiation time
Migration Rate	10 – 30 mm per month (depth into concrete)
Service Life Extension	10 – 25+ years (depending on exposure)

**NOTE: Performance depends on concrete quality, dosage, application method, and exposure conditions.**

## PACKAGING AND STORAGE

### Packaging:

- 200 L drums

### Storage:

- Store in original sealed containers at +5°C to +35°C
- Protect from direct sunlight, frost, and extreme heat
- Keep container tightly closed when not in use
- If frozen, thaw completely and agitate before use

**Shelf life:** 12 months from date of manufacture when stored properly

## DOSAGE AND COVERAGE RATES

The recommended coverage of **ChemFit FerroGard 903** is approximately 0.500 kg per square meter of concrete surface (minimum 0.3 kg/m<sup>2</sup>).

Application	Coverage Rate
Minimum dosage	0.3 kg/m <sup>2</sup>
Standard dosage	0.5 kg/m <sup>2</sup>
High dosage (severe exposure)	0.7 – 0.8 kg/m <sup>2</sup>

Coverage per 200 L drum:

- **Weight per drum:** Approximately 200 – 210 kg
- **At 0.5 kg/m<sup>2</sup>:** Covers approximately 400 – 420 m<sup>2</sup> of concrete surface
- **At 0.3 kg/m<sup>2</sup> (minimum):** Covers approximately 660 – 700 m<sup>2</sup> of concrete surface

**NOTE:** Coverage rates are approximate and vary based on concrete surface porosity, absorption, and application method. For rough or porous surfaces, higher application rates may be required. Two thin coats are recommended rather than one heavy coat.

## APPLICATION GUIDELINES

### Surface Preparation:

- Concrete surface must be clean, sound, and free from dust, oil, grease, laitance, curing compounds, existing coatings, and loose particles
- For existing structures: remove all deteriorated concrete, coatings, sealers, and contaminants
- For crack repair: fill all cracks larger than 0.3 mm before application (use suitable epoxy or repair mortar)
- Surface can be dry or damp, but must be free of standing water
- Do not apply to frozen surfaces or when freezing expected within 24 hours

### Mixing:

- Product is ready-to-use – no mixing or dilution required
- Stir gently before use if product has been stored for extended period
- Do not dilute with water or any other solvent

### Application:

- Apply by low-pressure spray (hand-held sprayer) or roller
- For best results, apply two thin coats rather than one heavy coat
- Apply first coat at 0.25 – 0.30 kg/m<sup>2</sup>
- Allow first coat to dry (minimum 4-6 hours depending on conditions)
- Apply second coat at 0.20 – 0.25 kg/m<sup>2</sup>
- For vertical and overhead surfaces, apply from bottom to top
- Ensure complete coverage of entire concrete surface
- Protect adjacent surfaces (glass, metal, finished wood) from overspray

### Curing and Drying:

- Allow product to dry for minimum 24 hours before exposure to rain or water
- Protect from rain and standing water during first 24 hours
- Full penetration into concrete occurs over 2-4 weeks
- For coated surfaces (paint, waterproofing), allow 48-72 hours drying before applying topcoats
- Test compatibility with topcoats on small area before full application

## HEALTH AND SAFETY

**ChemFit FerroGard 903** may cause mild eye and skin irritation. If eye contact occurs, rinse with water for 15 minutes and seek medical attention if irritation persists. For skin contact, wash with soap and water. If swallowed, do not induce vomiting; rinse mouth and drink water, then seek medical advice. Use gloves, safety glasses, and protective clothing during handling. Ensure adequate ventilation when using in enclosed spaces. Refer to the Safety Data Sheet for detailed information.

## CLEANG OF TOOLS

Clean all spray equipment, rollers, and containers with water immediately after use. Dried product may require soap and water for removal. Dispose of cleaning materials in accordance with local regulations.

## APPROVALS AND STANDARDS

**ChemFit FerroGard 903** conforms to the following standards:

- **ASTM C1582 / C1582M** – Standard Specification for Admixtures to Inhibit Chloride-Induced Corrosion of Reinforcing Steel in Concrete
- Aqueous impregnation corrosion inhibitor for reinforced concrete
- Forms protective monomolecular layer on rebars to prevent corrosion
- Suitable for protecting concrete rebars above and below ground
- Effective against chloride-induced corrosion and carbonation
- **NACE** (National Association of Corrosion Engineers) recommended practice
- Meets industry requirements for migratory corrosion inhibitors in concrete

## LEGAL NOTES

*All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.*

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