

ForSField™ SG-11 Protective Coating

Product Description

ForSField™ SG-11 protective coating is a surface tolerant, zero VOC, HAPs free, direct to metal (DTM), multipurpose, two part protective coating designed for spray applications. It has excellent adhesion to metal, concrete, and galvanized substrates. Its main purpose is to protect substrates from corrosion and impart superior chemical resistance. Can be used as a primer, tie coat, top coat, and for chemical immersion service. It is available in gray.

Features

- Free of VOCs, HAPs, and solvents
- Convenient 1:1 volumetric mix ratio
- Self priming and surface tolerant
- Bio-content is 26% by weight
- Exceptional resistance to acids, bases, and chemicals
- Excellent adhesion to steel, galvanized steel, and concrete substrates
- Resists corrosion

Dry Film Thickness and Coverage

- 11-15 mils (+/- 2 mils) DFT recommended for atmospheric service
- 15-25 mils (+/- 5 mils) DFT recommended for immersion service
- 50 mils DFT Maximum
- Up to 20 mils maximum per pass (to prevent sagging)
- Theoretical coverage of 123 ft²/gal @ 13 mils
- Theoretical coverage of 80 ft²/gal @ 20 mils

Intended Uses

For use as a medium to high-build epoxy coating to enhance corrosion and chemical resistance in a range of environments including petrochemical plants, mining facilities, pulp and paper mills, chemical process plants, and offshore structures. It can be used as a primer or a top coat. Recommended film builds are 11-15 mils for most applications and 15-25 mils for immersion applications. It can be used over tightly adhering rust to encapsulate it and prevent further corrosion. This coating is suitable for both maintenance and new construction applications.

Surface Preparation

ForSField™ SG-11 protective coating is a surface tolerant coating so it is able to maximize adhesion to substrates that are not perfectly prepared and encapsulates existing rust. This is very useful for maintenance applications where perfect surface preparation might be very difficult to achieve. Since this coating shows excellent adhesion to tightly adhering rust it can be used under these non-ideal conditions. A lower degree of surface preparation will affect adhesion to the surface. The surface to be coated should be clean and dry. Utilize sufficient methods to eliminate excess debris, scale, rust, water, or oil that may interfere with coating adhesion. It is recommended to wipe clean all metal surfaces with a solvent such as methyl ethyl ketone (MEK) after surface preparation and before coating application. For best results the following surface preparation is recommended.

Steel

For optimal results prepare the surface in accordance with SSPC-SP 5 / NACE 1 / Sa. 3 / BS4232 First Quality / 31 GP 404 Type 1 / JASh3 or JASd3, white metal blast cleaning for atmospheric and immersion service. An anchor profile of 3-4 mils is recommended.

As an alternative prepare the surface in accordance with SSPC-SP 6 / NACE 3 / Sa. 2 / BS4232 Third Quality / 31 GP 404 Type 2 / JASh 1 or JASd 1, commercial blast cleaning for atmospheric service. A minimum anchor profile of 1.5 mils is recommended.

Can be applied over galvanized steel after surface preparation in accordance to SSPC-SP 1 solvent cleaning with MEK.

Concrete

Concrete surfaces should be fully cured, cleaned and degreased. For optimal adhesion performance acid etching is recommended by using muriatic acid or a similar product.

Previously Painted Surfaces

ForSField™ SG-11 protective coating can be applied over most coatings in sound condition but compatibility needs to be tested beforehand. We recommend to sand or abrade to roughen and de-gloss the surface. Then solvent wipe the surface with MEK. Ensure the surface is dry and free from excess dust or debris before applying this coating.

Performance Data

All of the data presented are reported from tests performed on coatings applied under controlled laboratory conditions and may not represent exact data achieved in field applications.

Coating Characteristics:	Typical Value:	Units:	Method:
Viscosity (2 Part Mixture @ 73°F / 23°C)	16,000	cP	D2196-10 (#7 SP, 50 rpm)
Pull-Off Adhesion (Carbon Steel, White Metal Blast)	3,900-5,000	psi	PATTI® F-16 Piston
Pull-Off Adhesion (Smooth Concrete)	800	psi	PATTI® F-16 Piston
Pull-Off Adhesion (Galvanized Steel)	2,700	psi	PATTI® F-16 Piston
Taber Abrasion (CS-17 @ 1,000g Load, 1,000 Cycles)	91	mg	ASTM D4060-10
Impact Resistance @ 25°C	40	in-lb	ASTM D2794-93

Adhesion to Carbon Steel (PATTI® F-16 Piston)	
Surface Preparation:	Adhesion Typical Value:
SSPC SP5 / NACE 1 – White Metal Blast	4,600 psi
SSPC SP5 / NACE 1 – White Metal Blast with Flash Rust	2,000 psi
SSPC SP7 / NACE 4 – Brush Off Blast with Significant Rust	1,700 psi
SSPC SP1 – Solvent Wipe (Significant Rust)	2,500 psi
SSPC SP3 – Power Tool Cleaning	3,900 psi
Galvanized Steel	2,700 psi

Application

Listed below are general guidelines for the application of the ForSField™ SG-11. Specific project conditions may require modifications to these guidelines to achieve the desired results. Ensure the ambient temperature, unmixed product components and surface to be coated are above 55°F (13°C). Both components should be no warmer than 130°F (54°C) at the time of spray application. Best results are achieved with a relative humidity of 60% or less and a surface temperature of at least 5°F (3°C) above the dew point.

Mixing and Spray Application

- Mix ratio is 1:1 by volume
- Thinning is not recommended
- Plural component airless spray equipment capable of heating coating to 130°F and provide in line pressures of 4,500 psi at the tip
- Re-use of SG-11H hardener is not recommended and opened containers should be discarded at the end of the day
- Recommended clean-up solvent is MEK

HEAT WARNING! Curing epoxy generates significant heat. Never hand mix the ForSField™ SG-11R epoxy resin with the ForSField™ SG-11H hardener. Doing so will generate significant heat and the combined materials may reach temperatures which can cause severe burns to skin, melt plastic and foam, and ignite combustible materials (potentially as much as 300°F or higher). Do not mix the epoxy resin with the hardener in containers made of materials such as plastic, foam or glass. If a container of mixed epoxy resin and hardener starts to exotherm (heat up) take precautions to move the container to a safe location.

For industrial/commercial use. Application must be performed by trained personnel only using an appropriate plural component sprayer.

Adhesion to Concrete (PATTI® F-16 Piston)	
Surface Preparation:	Adhesion Typical Value:
Concrete - Smooth	800 psi
Concrete – Trowel Finished	600 psi
Concrete – Trowel Finished and Acid Etched	900 psi
Concrete – Paver with Porous Finish	1,200 psi

Curing Schedule

Curing Schedule*			
Surface Temperature	Dry-to-Touch:	Tack-Free:	Full Cure for Atmospheric Service:
68°F (20°C)	110 mins	5.5 hours	48 hours

Top-Coats

- Can be top-coated but compatibility would need to be tested beforehand
- Allow 7 hours after applying final coat, before top-coating with other coatings
- If the coating is older than five days, wipe surface down with MEK before top-coating

Shelf Life Information

We recommend storage at a controlled temperature of 25°C.

Shelf life of the ForSField™ SG-11R Resin is 2 years in original unopened container.

Shelf life of the ForSField™ SG-11H Hardener is 2 years in original unopened container.

Packaging

The ForSField™ SG-11 Protective Coating is available in pail (4 gallons), and drum (50 gallons) quantities.

Product Density

Density for the ForSField™ SG-11R Resin is 12.10 lbs/gal.

Density for the ForSField™ SG-11H Hardener is 8.20 lbs/gal.

Product Safety Information

Material Safety Data sheets are available upon request and on our website at: <http://www.cpchem.com/specialtychemicals>

For more information on ForSField™ Protective Coatings, view our product information online at:

<http://www.cpchem.com/bl/specchem/en-us/Pages/default.aspx>

* Curing times will vary with temperature, humidity, and other application conditions. Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. Chevron Phillips Chemical Company LP does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein or the product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Further, information contained herein is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use thereof. Such questions should be investigated by the user.

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