

EnerCote XP11

Chemical Resistant, Glass Flake, Epoxy Lining

DESCRIPTION

FMP EnerCote XP11 is one of the most advanced chemical immersion linings on the market. The polymer matrix is specifically designed to achieve wear and chemical resistance characteristics for the restoration and protection of metallic surfaces subjected to harsh corrosion and chemical attack. It provides outstanding chemical resistance allowing it to be used in a wide variety of environments including crude oil and sulphuric acid service.

This 100% solids, zero VOC, technology offers fast return to service and edge retentive properties. The coating system is designed for application versatility, it can be applied by brush, hot potted through a single component airless pump or applied through a heated 2:1 ratio plural component pump for maximum production throughput.

APPLICATIONS

- Penstock Lining
- Pipe Coating
- Petroleum Tanks
- Chemical Tanks
- Heat Exchangers

COVERAGE DATA

Theoretical coverage rate data

Kit Weight	Recommended Coating Thickness	Theoretical Coverage Rate
3.8 lb (1125 ml) (Cartridge)	30 mils (762 µm)	15.9 ft ² (2.36 m ²)
3.4 lb (1.5 kg)	30 mils (762 µm)	14.0 ft ² (1.64 m ²)
16.50 lb (7.5 kg)	30 mils (762 µm)	68.8 ft ² (9.45 m ²)
148.50 lb (67.5 kg)	30 mils (762 µm)	619.1 ft ² (47.7 m ²)

Practical Coverage = Theoretical Coverage - Waste Factor

COATING DRY FILM THICKNESS

- Minimum thickness – 20 mils (508 µm)
- Suggested thickness – 30 mils (762 µm)
- High wear and chemical exposure – 40 mils (1 mm)

TECHNICAL DATA

Performance / Property		Results
Hardness	ASTM D2240	[Shore D] 84
Pull Off Adhesion	ASTM D4541	≥4000 psi (≥27.5 MPa)
X Cut Adhesion	ASTM D6677	Rating 10
Abrasion Resistance	ASTM D4060	≤ 40mg
Cathodic Disbondment	ASTM G95 1.5V for 28 days @ 175°F (80°C)	≤5mm (≤0.19 in)

PHYSICAL DATA

Color	White
Mix Ratio	2:1 by volume
Mix Ratio	1.88:1 by weight
Sag Resistance (25 mils / 635 µm)	No Sag
Pot Life (77°F / 25°C)	25 minutes
Low Temperature Application	>50°F (>10°C)
Max. Recoat Window (75°F / 24°C)	24 hrs
Percent Solids	100%
Odor	Slight to nil
Mixed Viscosity	54,000 mPa•s (cP)
Mixed Density	1.54 g/ml
Max. Operating Temp. - Wet Service	200°F (95°C)
Max. Operating Temp. - Dry Service	300°F (150°C)
Cure Time - Touch (77°F / 25°C)	2 hours
Cure Time - Handle (77°F / 25°C)	8 hours

Before applying this product, please refer to the Application Instructions.

PACKAGING

- 1125 ml / 0.3 gal / 1.7 kg / 3.8 lb Cartridge Tube
- 1 L / 0.3 gal / 1.5 kg / 3.4 lb Kit
- 4.9 L / 1.3 gal / 7.5 kg / 16.50 lb Kit
- 43.8 L / 11.6 gal / 67.5 kg / 148.50 lb Kit

Larger volume packaging for plural component spray is available upon request.

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SURFACE PREPARATION

Ensure that surface is clean, dry and uncontaminated. Pre-cleaning of the surface is necessary to remove oil, wax or other foreign contaminant which may contaminate the abrasive media and impregnate itself into the blast profile. Always check for ionic salt contamination (chlorides and sulfates) and neutralize the surface as required. Proceed only if the substrate temperature is 5°F (3°C) above the dew point temperature and that the relative humidity is below 85% during surface preparation and coating application. Abrasive blast with clean angular abrasive media. For steel surfaces, blast to a Near White Metal Blast (SSPC-SP10; NACE 2; SA 2.5) with a minimum 3 mils (75 µm) depth profile. Blow down the surface before applying the coating to ensure it is free of dust and other loose contaminants.

Pitting Filling/Irregular Welds – Irregular surface roughness caused by welding or corrosion shall be resurfaced with a polymeric metal rebuild compound. Overcoating of the repair area may require roughening of the repair compound before applying the top coat material. Refer to application instructions for the repair compound.

Salt Water Service - It is highly recommended that where the substrate has been exposed to salt water immersion that the surface is abrasive blasted, allowed to sit for 12 hours, followed by high pressure water jetting with a neutralization solution before re-blasting for the application of the coating.

MIXING INSTRUCTIONS

Mixing Ratio	
Volume	2 part Resin (A) : 1 part Hardener (B)
Weight	1.88 part Resin (A) : 1 part Hardener (B)

This is a two-component system. **COMPLETE UNIT MUST BE MIXED AND APPLIED AT ONE TIME. DO NOT MIX PARTIAL QUANTITIES FROM CONTAINERS OR PROPER RATIOS MAY NOT BE OBTAINED.**

Ensure product temperature is between 68-85°F (20-30°C), pre mix Resin Part A and Hardener Part B individually, be sure that any settled material at the bottom of the can is dispersed. Slowly pour the contents of the hardener into the resin while mixing slowly.

Pour a quarter of the hardener into the resin at one time and mix, once dispersed add the remainder of the hardener in small increments while mixing until the full content has been added. Mix for 2 minutes until a uniform color and consistency is achieved. To ensure complete mixing, scrape sides and bottom of container and continue mixing for an additional 1 minute. If a mechanical drill with Jiffy mixer is used, mix at slow rpm speed. Excessive mixing speed will induce air into the mixture and is not recommended.

APPLICATION INSTRUCTIONS

Once mixed, begin application immediately - no induction time is needed. This product will have a short working pot life and will develop exothermic heat due to the polymeric reaction. Contents of the container may be portioned off into smaller containers to maintain pot life. The product may be applied by brush or roller. Work the material into the surface profile to completely wet out the substrate surface to ensure proper adhesion. **No reducing or thinning of the material is permitted.**

CARTRIDGE SPRAY SYSTEM

Refer to the reference guide before use. Preheat the cartridge tubes to 130-140°F, (55-60°C) do not exceed 158°F (70°C). Shake the cartridge tube to ensure that if any settling occurs that it is redispersed into the product. Set the plungers to a 2:1 ratio. Use the low flow (gray tip) static mixer without check ball valve (white base). Begin the spray application with a minimum inlet air pressure of 80 psi (5.5 bar). Purge the product through the static mixer to ensure that both resin and hardener components are properly dispensed and that the cartridge plunger depth is equal between both components. The air supply to the atomizer should be set to 3 or 4, too much atomization air will increase the surface roughness. Set the plunger speed to medium (4) on the dial. Stand a minimum 16 inches (40 cm) from the surface while spraying. Before spraying on target, always trigger the gun off target until well mixed material is achieved.

SINGLE LEG AIRLESS AND PLURAL COMPONENT SPRAY APPLICATION

Consult with FMP Coatings for the system guide and set up recommendation for the use of single leg airless and heated plural component equipment for the application of this material.

SPRAY APPLICATION

Prior to full coating application, stripe all continuous welds and edges by brush. Apply coating wet on wet to striped areas. Apply the coating at no more than 20 mils (500 µm) per pass. Apply the coating to the specified thickness in a crisscross multipass technique.



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INSPECTION

Immediately following the application of the coating, visually inspect for pinholes and areas of missed coating. These areas can be repaired immediately if the coating is tacky to touch.

Further inspection is to be performed once the coating has cured. Visually inspect the coating for discoloration, pinholes, uncured coating, blisters, and other visual defects. Mechanical removal and reapplication may be required depending on the defect type.

Where the coating is to be used for immersion service or service where corrosion protection is required, discontinuity testing in accordance with relevant ASTM standards must be performed. The minimum recommended voltage is 2000 volts or 100 volts/mil based on the average coating thickness.

STORAGE & CLEAN UP

- 1) Use commercial solvents (Xylene, Methyl Ethyl Ketone) to clean tools immediately after use.
- 2) Once the coating is dry, the material must be abraded off.
- 3) Keep containers tightly sealed. For cleanup, use M.E.K. or a 50:50 blend of M.E.K. and Xylol.
- 4) Long time storage should be between 50°F (10°C) and 80°F (27°C).
DO NOT FREEZE.
- 5) Use product within 2 years of receiving. Once the product lid is opened it must be resealed tightly. The shelf life will be reduced to 3 months.

Cartridge tubes have a 1 year shelf life. Separation may occur, preheat and shake cartridges well before use.

CURING PERFORMANCE

FOR CHEMICAL SERVICE THE COATING MUST CURE FOR A FULL 7 DAYS. Force curing for 6 hours at 120°F (50°C) may be used to expedite chemical service. Spray temperature and substrate temperature will affect the coating cure time. The warmer the temperature the faster the reaction speed.

Curing Schedule	50°F	77°F	86°F
	10°C	25°C	30°C
Pot Life	45 minutes	25 minutes	25 minutes
Dry to Touch	5 hours	2 hours	1.5 hours
Dry to Handle	12 hours	8 hours	4 hours
Full Load Exposure	16 hours	12 hours	8 hours
Max. Recoat Time	36 hours	24 hours	18 hours

SAFETY

Before using any products, please refer to the Safety Data Sheet (SDS). Follow standard confined space entry and work procedures, if appropriate.

Wear eye safety protection and full skin protection including chemical resistant gloves. Use NIOSH approved respirator where mist occurs.

Before applying this product, please refer to the Technical Data Sheet.



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