



## APPLICATION GUIDE

### **COSMO-EPOXY M-81 (PARTS A and B)**

### **MULTIPURPOSE EPOXY POLYAMIDE ANTI-CORROSIVE SYSTEM**

#### **SURFACE PREPARATION:**

There is a correlation between good adhesion results when using this epoxy system and correct surface preparation prior to use. Proper preparation consists of removing all residue, oil, dirt, grease, dust, rust, contaminants and excessive moisture present on the surface. Also, in reference to the SSPC standards mentioned in the different parts of this Surface Preparation section, refer to the APPENDIX - SUMMARY OF SSPC STANDARDS.

#### **.i. Galvanized steel**

Allow to weather for a minimum of six months before coating. Clean with solvent in accordance with SSPC-SP1 (recommended solvent is Cosmo-Epoxy M-81 Thinner). Where weathering is not possible, or the surface has been treated with chromates or silicates, first solvent clean in accordance with SSPC-SP1 and apply a test patch. Allow the paint to dry for at least a week before testing for adhesion. If the adhesion is weak, it will be necessary to apply the blast jet in accordance with the SSPC-SP7 standard to remove these treatments. Rusted galvanizing requires minimal hand tool cleaning in accordance with SSPC-SP2, prime area the same day it is cleaned.

#### **.ii. Aluminum**

Remove all oil, grease, dirt, rust, and other foreign material by solvent cleaning in accordance with SSPC-SP1.

#### **.iii. Concrete and Masonry (atmospheric service)**

For surface preparation, refer to NACE 6/SSPC-SP13. Surfaces must be completely clean and dry. Concrete and mortar must be cured for at least 28 days @ 75 °F (24 °C). Remove all loose mortar and foreign material. The surface must be free of laitance, concrete dust, dirt, shoring release agents, moisture curing membranes, loose cement and hardeners. Fill holes, air pockets and other gaps with cement patching compound. Weathered masonry and soft or porous cement pre-casts should be blast cleaned or power tool cleaned to remove poorly adhered contamination and to obtain a hard, firm surface. The grout must be removed by treating it with a 10% solution of muriatic acid and neutralizing completely with water.

#### **.iv. Concrete and Masonry (immersion service)**

For surface preparation, refer to NACE 6/SSPC-SP13, Section 4.3.1 or 4.3.2

#### **.v. Iron and Steel (atmospheric service)**

The minimum surface preparation is by cleaning with hand tools according to SSPC-SP2. Remove all oil and grease from surface by solvent cleaning in accordance with SSPC-SP1. For best performance, use commercial blast cleaning in accordance with SSPC-SP6, blast clean all surfaces using a sharp, angled abrasive for optimum surface profile (2.0 mils). Prime the surface of any bare steel within 8 hours or before surface rust occurs.

#### **.vi. Iron and Steel (immersion service)**

Remove all oil and grease from the surface by wiping with solvent in accordance with SSPC-SP1. Minimum surface preparation is blast cleaning to near white metal in accordance with SSPC-SP10, blast clean all surfaces using a sharp, angular abrasive for optimal surface profile (2-3 mils). Remove all weld spatter and round off all sharp edges. Prime any bare steel the same day it is cleaned.

#### **.vii. Previously Painted Surfaces**

If in good condition, clean the surface of all foreign matter. All smooth, hard or shiny coatings and surfaces must be dulled by sanding the surface. Apply to a test area allowing the paint to dry for a week before testing for adhesion. If adhesion is poor, or if this product

attacks the previous finish, the previous coat can be removed. If the paint is peeling or poorly weathered, the surface should be cleaned down to the firm substrate and treated as a new surface.

#### **APPLICATION CONDITIONS:**

Temperature: 40 °F / 4.4 °C minimum, 110 °F / 43.3 °C maximum (air, surface, and material)  
At least 37 °F / 3 °C above dew point  
Relative Humidity: 85% maximum

#### **APPLICATION EQUIPMENT:**

The following information should serve as a general guide. Changes in pressures and nozzle sizes may be required to achieve specific and/or adequate spray characteristics. Always purge spray equipment before using epoxy reducer. Any reduction must be compatible with the environmental and existing application conditions.

**Reducer/Cleaning** ..... Special reducer for epoxy

#### **Airless spraying**

Bomb ..... 30:1  
Pressure..... 2500 - 3000 psi  
Hose ..... 1/4" (6.35mm) ID  
Nozzle ..... .015" - .023" (0.381 - 0.584 mm)  
Filter..... 60 mesh  
Reduction..... Whatever is needed up to 10% by volume

#### **Conventional Spray**

Pistol..... DeVilbiss MBC-510 or equivalent  
Fluid Nozzle ..... .E  
Air Nozzle ..... 704  
Atomization Pressure..... 50 - 80 psi  
Fluid Pressure..... 20 psi  
Reduction ..... Whatever is needed, between 20% – 25% by volume  
Requires oil and moisture separators

#### **Brush**

Brush..... Nylon/Polyester or Natural Bristle  
Reduction ..... Not recommended

#### **Roller**

Plush ..... 3/8" (9.53 mm) avitelated with phenolic core  
Reduction..... Not recommended

#### **APPLICATION PROCEDURES:**

Mix the contents of both components by mechanical stirring. Make sure there is no pigment left in the background. The mixing ratio is 1 PART A : 1 PART B. Combine 1 part volume of Part A with 1 equal part volume of Part B. Completely agitate the mixture by mechanical agitation. Allow induction of the material as indicated at the end of this section prior to application. Shake again before use.

If a reducing solvent is used, add only after both components have been completely mixed, after induction.

Apply the paint at the recommended film thickness and performance as follows:

#### **Recommended Application Thickness per coat:**

Wet thickness: 7.0 - 13.5 mils  
Dry thickness: 5.0 - 10.0 mils  
Performance: 115.7 – 231.4 sq ft (10.75 – 21.50 m<sup>2</sup>) / gal

- Brush or roller applications may require multiple coats to achieve maximum film thickness and uniformity of appearance.

### Drying Time with 7.0 wet mils and 50% Relative Humidity:

	<b>40 °F / 4.4 °C</b>	<b>77 °F / 25 °C</b>	<b>100 °F / 38 °C</b>
Touch:	3 hours	1 hour	½ hour
For handling:	48 hours	8 hours	4½ hours
To repaint:			
(minimum):	48 hours	5½ hours	4 hours
(maximum):	3 months	3 months	3 months
To cure:			
(service):	10 days	7 days	4 days
(immersion):	14 days	7 days	4 days

- If the maximum coating time is exceeded, you must sand the surface before coating.
- Drying times depend on temperature, relative humidity and applied thickness.

**Shelf Life of the Mix:** 10 hours 4 hours 2 hours

**Induction Time:** 30 minutes 30 minutes 15 minutes

- Application of the coating above the maximum or below the minimum recommended application thickness could adversely affect the performance of the coating.

### TIPS FOR OPTIMUM PERFORMANCE:

- Strip coat sharp angles as well as cracks and welds to prevent premature failure in these areas.
- When using spray application, overlap 50% with each pass of the gun to avoid pinpoints, bare areas, and small holes. If necessary, apply crosswise at right angles.
- Performance (yield) is calculated based on volume of solids and does not include the factor of application loss due to surface profile, surface roughness or porosity, skill and technique of applicator, application method, various surface irregularities, loss of material during mixing, spillage, over-thinning, weather conditions, and excessive film thickness.
- Excessive reduction of material can affect film thickness, appearance and adhesion.
- Do not mix previously catalyzed material with new material.
- Do not apply material in excess of the recommended shelf life of the mix.
- To prevent blocking of spray equipment, clean equipment before use or before an extended period of downtime with a special Epoxy Reducer.
- Inking is not recommended for immersion service.

### CLEANING INSTRUCTIONS:

Clean up spills and splashes immediately with a special reducer for epoxy. Clean tools immediately after use with a special reducer for epoxy. Follow the manufacturer's safety recommendations when using any solvent.

### SAFETY PRECAUTIONS:

Refer to product's Safety Data Sheet before use.

### ADDITIONAL INFORMATION:

The data in this Application Guide represent typical values of the product characteristics. It is the user's responsibility to take appropriate measures in order to comply with the requirements established within their industry under current legislation. The information represents a general guide and should not be considered as a guarantee of its properties. The information provided is based on the company's own research and that of experts. From the moment the user receives it until he or she decides to use the product (the product has a useful life of 12 months), the content of the Application Guide may change without prior notice.

## APPENDIX – SUMMARY OF SSPC STANDARDS

### (MENTIONED IN SURFACE PREPARATION SECTION)

**SSPC-SP-1 (Solvent Cleaning)** Surface preparation or cleaning using solvents, water vapor, alkaline solutions, soapy emulsions, detergents and organic solvents that remove contaminants from the substrate such as: grease, oil, dust and salts soluble in the cleaning agent. Solvent cleaning can be used prior to paint application and in conjunction with other mechanical surface preparation methods for the removal of rust, mill scale, or paints.

**SSPC-SP-2 (Hand Tool Cleaning)** Surface preparation or manual cleaning using manual tools (hand brushes, sandpaper, etc.) to remove impurities, such as: welding residues, oxidation, aged paint and other fouling. This method may not completely remove all incrustations that are adhered to the surface.

**SSPC-SP-6 / NACE N°3 (Abrasive blast cleaning - Commercial shot blasting / sandblasting)** Surface preparation or Abrasive blast cleaning known as shot blasting or sandblasting - Commercial Grade. This type of cleaning uses some type of pressurized abrasive to clean the surface, through this method, all mill scale, rust, paint and any fouling material is removed. The surface must be free of oil, grease, dust, rust and the remains of the lamination layer must not exceed 33% of the surface in each square inch of it. The remains should only be seen as having a different color. It is generally specified in those areas with very little demand without corrosive environments.

**SSPC-SP-7 / NACE N°4 (Abrasive blast cleaning - Quick shot blasting / sandblasting)** Surface preparation or Abrasive blast cleaning known as quick shot blasting or sandblasting or burst. This type of cleaning uses some type of pressurized abrasive to clean the surface; through this method, mill scale, rust, paint and any encrusting material is removed. The surface must be free of oil, grease, dust, loose lamination film, loose rust and loose layers of paint. Keeps the lamination layer where it is firmly adhered. These parts should not be detached with a sharp object. It is used only in cases of very mild conditions and will present areas of probable failure.

**SSPC-SP-10 / NACE N°2 (Abrasive blast cleaning - Shot blasting / semi white sandblasting)** Surface preparation or abrasive blasting known as shot blasting or semi-white sandblasting. This type of cleaning uses some type of pressurized abrasive to clean the surface; through this method, all mill scale, rust, paint and any fouling material is removed. The surface must be free of oil, grease, dust, rust, lamination layer, paint residue and other foreign materials. Up to 5% of contaminant remains are allowed, which may appear only as different coloration on each square inch of the surface. It is the most commonly used specification. It has the characteristics of good preparation and speed at work. It is used for regular to severe conditions.

**SSPC-SP-12 / NACE N° 5 (Pressure water cleaning - Waterjetting)** Surface preparation or pressure water cleaning or waterjetting. This type of cleaning achieves a defined degree of surface cleanliness prior to the application of a coating or protective coating. The standard is limited in scope to the exclusive use of water and is used primarily for applications where the substrate is carbon steel. However, the waterjetting process can be used for cleaning non-ferrous surfaces such as bronze, aluminum, and other metals such as stainless steel. This standard does not address the cleaning of concrete which is detailed in SSPC-SP 13.

**SSPC-SP-13 / NACE N°6 (concrete cleaning)** Surface preparation or cleaning of concrete using mechanical, chemical, or thermal methods prior to the application of a protective coating or coating. The requirements of this standard are applicable to all types of cement surfaces, including floors and walls, prefabricated slabs, masonry walls, etc. A concrete surface must be free of contaminants, laitance, loosely adhered concrete, and dust, providing a uniform substrate suitable for the application of protective coating or coating.

**4.3** Methods of mechanical surface preparation.

**4.3.1** Dry abrasive blasting, wet abrasive blasting, vacuum-assisted abrasive blasting, and centrifugal shot blasting, as described in ASTM D 4259, can be used to remove contaminants, laitance, and weak concrete, to expose underground voids, and to produce a good concrete surface with adequate profile and surface porosity.

**4.3.2** Cleaning with high-pressure water or Waterjetting as described in NACE No. 5/SSPC-SP 12, ASTM D 4259, can be used to remove contaminants, laitance and weak concrete, to expose underground voids and to produce a good concrete surface with adequate profile and surface porosity.

