product data carboline®

PLASITE® 9053

TYPE
A low VOC water-resistant epoxy coating polymerized with a polyamine-type curing agent.

INTENDED USE
Primarily as a tank lining for water, including deionized or distilled water at elevated temperatures. Special pigmentation provides additional film undercutting protection in high temperature brine solutions. Complies with the requirements of the United States Food and Drug Administration 21 CFR 175.300 for direct food contact use. **FOR INDUSTRIAL USE ONLY!**

TEMPERATURE RESISTANCE
Dry film basis is 350°F for short periods. Continuous immersion temperatures depend on particular reagent and temperatures.

COLOR
Charcoal Gray.

FILM THICKNESS PER COAT
A 5 to 8 mil film is produced in one multi-pass spray coat. Total film thickness recommended: DI water, distilled water, tap water, waste and brine water - 12 to 16 mils; in sparger hoppers - 8 to 12 mils.

COVERAGE
1,171 mil ft^2/gallon ± 2% (theoretical). Two multi-pass spray coats will produce the DFT recommended for immersion service. 66.9 ft^2/gallon will produce a 12 to 16 mil DFT film; 93.7 ft^2/gallon will produce an 8 to 12 mil DFT film (20% loss included).

DRYING TIME
Surface will normally be tack-free in 6 to 8 hours at 70°F.

VOC CONTENT	Coating as Supplied (Determined Theoretically)		Thinned 10% by Volume with PLASITE Thinner #71 (Determined Theoretically)	
Color	**Lbs./Gal.**	**g/L**	**Lbs./Gal.**	**g/L**
Charcoal Gray	1.96 ± 2%	234 ± 2%	2.40 ± 2%	288 ± 2%

ZONE OF USAGE
A Zone: This would include immersion service for process and storage vessels. Refer to FILM THICKNESS PER COAT section on page 1.

THINNERS
PLASITE Thinner #71 is recommended under most conditions. The amounts of thinner required will vary depending on air and surface temperatures and application equipment. Normal application temperatures and conditions will require the addition of approximately 10% by volume with approximately 5% additional thinner added for each 5°F of increased temperature. Airless spray equipment and above normal temperatures require additional thinning.
It is recommended that the amount of thinner included on each order amount to approximately 20% of the coating order.

CLEANUP THINNER: Thinner #71

CURING
For immersion service, curing will normally take place in 7 days at 70°F, 10 days at 60 to 69°F or 14 days at 50 to 59°F. This coating should not be applied when air temperature or temperature of surface to be coated is below 50°F. As ventilation and other factors affect the time/cure of coatings, additional time allowance is recommended at any temperature if cure time is questioned. PLASITE 9053 should be force cured for all taste sensitive immersion services.
Force curing at elevated temperature does increase resistance to certain exposures, therefore, when exposure is severe, force curing is recommended to obtain maximum resistance.

Listed below are a few force curing schedules that may be used for time and work planning. Prior to raising metal to the force curing temperature, allow 2 to 5 hours air dry time at 70°F to 100°F. After the appropriate air dry period, raise metal temperature approximately 30°F each 30 minutes until the desired force curing metal temperature is reached.

METAL TEMPERATURE	CURING TIME	METAL TEMPERATURE	CURING TIME
130°F	18 Hrs	170°F	4 Hrs
140°F	10 Hrs	180°F	3 Hrs
150°F	6 Hrs	190°F	2 ½ Hrs
160°F	5 Hrs	200°F	2 Hrs

SURFACE PREPARATION
Steel
Immersion Service (Zone A as described under Zone of Usage)
All sharp edges shall be ground to produce a radius and all imperfections such as skip welds, delaminations, scabs, slivers and slag shall be corrected prior to abrasive blasting. Skip welds shall be welded solid.

Degrease surface prior to sandblasting. Organic solvents, alkaline solutions, steam, hot water with detergents or other systems that will completely remove dirt, oil, grease, etc. may be used. Used tanks may require additional decontamination.

The surface shall be blasted to a SSPC-SP5 or NACE No. 1 white metal surface using a Venturi blast nozzle supplied with 80 to 100 psi. An anchor pattern or "tooth" in the metal shall correspond to approximately 20 to 25% of the total film thickness of the coating.

Contaminated grit shall not be used for the finish work.

PHYSICAL SPECIFICATIONS

Pigments: Iron oxide and inerts.

Solids: 89% ± 2% by weight; 73% ± 2% by volume.

Pot Life: Approximately 2 to 3 hours at 70°F.

Shelf Life: 24 months at 70°F. Material in stock should be turned upside down every 3 months.

Thermal Shock: Unaffected in 5 cycles, minus 70°F to plus 212°F.

CHEMICAL RESISTANCE

Fresh Water	Sea Water	Brines

A non-pressurized Atlas Cell test condition consisting of DI water at 212°F had no effect after one year.

NOTE: Although the chemical tests indicated show that PLASITE 9053 is unaffected as listed, it is not meant to imply an express guarantee in actual service. The service is dependent upon proper application and actual operating conditions and it is recommended that users confirm adaptability of the product for a specific use by their own tests. PLASITE 9053 is not suitable for service in corrosive acids or oxidizing service for continuous immersion.

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The blasting media used shall be a natural abrasive, or steel grit, or slag grit (similar or equal to BLACK BEAUTY®). These abrasives shall be sharp with a hard cutting surface, properly graded, dry and of best quality. The media shall be of proper size to obtain the specified anchor pattern and shall be free of objectionable contaminants.

The anchor pattern shall be sharp and no evidence of a polished surface is allowed.

Remove all traces of grit and dust with a vacuum cleaner or by brushing. Care must be taken to avoid contaminating the surface with fingerprints or from detrimental material on the workers' clothes.

The surface temperature shall be maintained at a minimum of 5°F above the dew point to prevent oxidation of the surface. The coating shall be applied within the same day that the surface has been prepared.

Concrete
Contact Carboline for a recommendation.

Aluminum
Surface shall be clean and grease-free with a blast produced anchor pattern or "tooth" as described earlier under Steel. In addition, the blasted surface shall be given a chemical treatment such as:

ALODINE 1200S available from Henkel Surface Tech

IRIDITE 14-2 produced by MacDermid Incorporated

OAKITE CRYSCOAT 747LTS and OAKITE CRYSCOAT

ULTRASEAL produced by Oakite Products

APPLICATION
Mixing
Mix Part II into Part I using mechanical agitator, making sure all of Part II is completely mixed with Part I. Do not reduce or leave out any of the Part II. Mix well until obtaining a smooth liquid free of any unmixed particles of pigment. Add Part III and mix well. Part I is the liquid resin. Part II is the pigment and Part III is the curing agent. Splitting of kits is not recommended. If necessary, mix Part I and Part II thoroughly and proportion mixture accurately with Part III. The total coating (Part I and Part II mixture) to curing agent (Part III) ration is 4:1 by volume. Continuous slow agitation during use is recommended. The coating should stand approximately 15 minutes after the curing agent has been thoroughly mixed.

Spray
All spray equipment should be thoroughly cleaned and the hose, in particular, should be free of old paint film and other contaminants.

Use standard production type spray guns:

GUN	FLUID	AIR
DeVilbiss JGA-510	E	797
Binks #2001	66-SS	63-PB
Graco P800	04	02

When airless spray equipment is used, the recommended liquid pressure is 1500 to 1800 psi with tip size from .017" to .021". Thinning requirements are more than for conventional spray.

Continuous mixing during use is recommended.

Air supply shall be uncontaminated. Adjust air pressure to approximately 50 lbs. at the gun and provide 5 to 10 lbs. of pot pressure. Adjust spray gun by first opening liquid valve and then adjusting air valve to give an 8" to 12" wide spray pattern with best possible atomization.

Apply a "mist" bonding pass.

Allow to dry approximately one minute, but not long enough to allow film to completely dry.

Apply crisscross multi-passes maintaining an even continuous wet appearing film. This technique will enable an 8 to 10 mil wet film (approximately 6 to 8 mils DFT) to be applied per multi-pass coat. Repeat this procedure for second coat to obtain a film of 12 to 16 mils, noting the overcoat instructions below.

Overcoat time will vary both with temperature and ventilation. Normally 8 to 12 hours at 70°F is required for enclosed spaces, with additional time needed if coating is being applied at lower temperatures. Remove all overspray by dry brushing or scraping if required.

Equipment must be thoroughly cleaned immediately after use with Plasite thinner to prevent the setting of the coating.

Note: All welds, pits and rough metal areas should be coated by brush prior to spray application.

Brush
Recommended for small areas and repairs only. Use a high quality brush and apply a very light crisscross brush coat. Allow to dry for approximately 5 minutes. Then apply a heavy coat using a crisscross brush pattern. "Flow" the coating on rather than try to "brush out." Allow to dry tack-free. Repeat Steps 3 and 4 until sufficient film thickness is obtained. Normally, a film thickness of 3 to 4 mils can be obtained per coat by this method.

INSPECTION
CAUTION! Due to the type of pigmentation in PLASITE 9053, high voltage holiday inspection equipment cannot be used without damaging the coating film. The use of non-destructive type holiday inspection equipment such as the Tinker Rasor Model M1 A 67.5 volt wet sponge type detector is recommended.

Degree of surface preparation shall conform to appropriate specifications as outlined in SURFACE PREPARATION section. Film thickness of each coat and total dry film thickness of coating system shall be determined with a non-destructive magnetic gauge properly calibrated.

Refer to Plasite Bulletin PA-3, Section 3, for inspection requirements.

SAFETY
READ THIS NOTICE
SAFETY AND MISCELLANEOUS EQUIPMENT

For tank lining work or enclosed spaces, it is recommended that the operator provide himself with clean coveralls and rubber soled shoes and observe good personal hygiene. Certain personnel may be sensitive to various types of resins which may cause dermatitis.

THE SOLVENT IN THIS COATING IS FLAMMABLE AND CARE AS DEMANDED BY GOOD PRACTICE, OSHA, STATE AND LOCAL SAFETY CODES, ETC. MUST BE FOLLOWED CLOSELY. Keep away from heat, sparks and open flame and use necessary safety equipment, such as, air mask, explosion-proof electrical equipment, non-sparking tools and ladders, etc. Avoid contact with skin and breathing of vapor or spray mist. When working in tanks, rooms and other enclosed spaces, adequate ventilation must be provided. Refer to Plasite Bulletin PA-3. Keep out of the reach of children.

CAUTION - Read and follow all caution statements on this product data sheet, material safety data sheet and container label for this product.

This data sheet provides standard information on the coating and application procedure. Since varying conditions may not be covered, consult with your local sales representative or Carboline Technical Service Department for further information.

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