product data carboline®

PLASITE® 7133

PRODUCT DESCRIPTION
A combination of epoxy and polyamide type resins with selected pigments designed specifically as a high chemical resistant, non-toxic, odorless coating.

USES/APPLICATIONS
- Primarily as a tank lining and equipment coating material
- For the food and beverage industries.

Note: When properly applied and force cured, PLASITE 7133 will not impart taste or odor to such products as sugar solutions, wine, beer, meat products, and similar items. This coating is resistant to the standard cleaning for sanitation purposes and will withstand normal atmospheric steam cleaning procedures.

APPROVALS/CERTIFICATIONS
- Meets the requirements of the U.S. Food and Drug Administration 21 CFR 175.300.
  Note: Special colors may not meet FDA requirements; consult Carboline Technical Service Department.
- PLASITE 7133 has been accepted by the U.S. Environmental Protection Agency for surfaces which contact potable water.
- PLASITE 7133 White, Lt. Gray, Lt. Blue and Brown have been accepted by the U.S. Department of Agriculture for use in direct food contact areas.

TEMPERATURE RESISTANCE
Dry film basis is 400°F/204°C for short periods; 250°F/121°C continuous. Continuous immersion temperatures depend on particular reagent and exposure.

CHEMICAL RESISTANCE
Excellent chemical resistance to a wide range of acids, alkalies, solvents and water solutions. Contact Carboline's Technical Service Department for further information.

COLORS
PLASITE 7133 is offered in brown, white, light blue, black, tile red and light gray.

PACKAGING
PLASITE 7133 is available in one and five gallon kits that include the following:
One gallon kits include:
1 1 gallon can of Part A
1 1 quart can of Part B

Five gallon kits include:
1 5 gallon bucket of Part A
1 3 gallon bucket of Part B

FILM THICKNESS
A 4-5 mil/100-125 microns film is produced in one multi-pass spray coat. A 2-3 mil/50-75 microns film may be produced in one "flow-on" brush coat.

COVERAGE
The theoretical coverage of PLASITE 7133 is 802 mil sq. ft./gal. For estimating purposes, 64 sq. ft./gal. will produce an 8-10 mil/200-250 microns DFT (20% loss included). Two multi-pass spray coats will produce the 8-10 mil/200-250 microns DFT recommended for immersion service.

THINNERS
The following thinners are recommended:
PLASITE Thinner # 8 : A blended thinner specifically for conventional spray.
PLASITE Thinner # 71 : Recommended for airless or conventional spray.

PHYSICAL CHARACTERISTICS

Solids:.....68% ± 2% by weight
50% ± 2% by volume

Pot Life (Approx.):.....12 hours at 70°F/21°C

Shelf Life:.....24 months at 70°F/21°C
Note: Material shock should be turned upside down every 3 months.

Spray Viscosity: 20 ± 5 seconds Ford Cup #4 depending on color.

Shipping Weight: Approximately 13 lbs./gal.

Electrical Resistance: 5.9×10^{12} ohm-cm volume resistivity. ASTM D257-66.

***Abrasion Resistance**: 57.7 milligrams average loss per 1000 cycles, Taber CS-17 Wheel - 1000 gram wt. White color.

***Surface Hardness**: Konig pendulum hardness of 145 seconds; (Glass Standard = 250 seconds) ASTM Method D4366-84.

Thermal Shock: Unaffected 5 cycles minus 70°F/-56°C to plus 200°F/93°C.

Gloss: 86 @ 60°.

*__Note__: The above tests were conducted on coating film cured at 150°F/66°C.

PLASITE Thinner # 69 : Recommended for airless or conventional spray. A special blend of fast evaporating solvents containing no hydrocarbons. The amounts required will vary depending on air and surface temperatures and application equipment. Normal application temperatures and conditions will require addition of approximately 10% by volume with approximately 5% additional thinners added for each 5°F/3°C of increased temperature. Airless spray equipment and above normal temperatures require additional thinning. It is recommended that the amount of thinner included in each order amount to approximately 20% of the coating order.

CLEANUP THINNER: Thinner #71

VOC CONTENT

	Coating as Supplied (ASTM Mehtod D2369)		Thinned 10% by Volume with PLASITE Thinner #71 (Determined Theoretically)	
Color	**Lbs./Gal.**	**g/L**	**Lbs./Gal.**	**g/L**
White	3.19 ± 2%	381 ± 2%	3.51 ± 2%	418 ± 2%

VOC content varies between colors. Contact Carboline's Technical Service Department for VOC of specific colors

STORAGE CONDITIONS
Store all components between 50-75°F/10-24°C in a dry area. Keep out of direct sunlight. Avoid excessive heat and do not freeze. The shelf life is 24 months in the original, unopened container.

PRIMERS
Primers of the inhibitive type must be used when steel surfaces are not blasted to white metal and when finish coatings are below 8 mil/200 microns in thickness. The following primer may be applied by either brush or spray application:

PLASITE 7100 series primer is an epoxy-phenolic heavy-duty catalyzed primer.
Note: The primer listed above is NOT recommended for food or immersion service or any service where FDA compliance is required.

April 2008 replaces August 2003

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PLASITE®7133

SURFACE PREPARATION

Steel

High Temperature & Immersion Service

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 minimum SSPC-SP10 or NACE No. 2 near white metal surface using a Venturi blast nozzle supplied with 80-100 psi. An anchor pattern or "tooth" in the metal shall correspond to approximately 20-25% of the total film thickness of the coating. Contaminated grit shall not be used for the finish work.

The blasting media used shall be a natural abrasive, 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.

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/3°C 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. Visible oxidation or condensation is not allowed.

Service in Corrosive Atmosphere (Non-immersion)

Degrease surface as described above.

SSPC-SP10 or NACE No. 2 (near white metal blast cleaning) - strong fumes and splash spill.
SSPC-SP6 or NACE No. 3 (commercial blast cleaning) - high temperature fumes.
SSPC-SP7 or NACE No. 4 (brush-off blast cleaning) - chemical atmosphere and weathering.
SSPC-SP3 (power tool cleaning) - chemical atmosphere and weathering.

When utilized, inhibitive primer should be applied as soon as possible after surface preparation.

Surface preparation for chemical atmosphere and weathering must result in a relatively rough surface. If the steel is new and this type of surface preparation does not leave a reasonably rough surface on the steel, the heavy film system is not recommended. Depending on service conditions, film thickness requirements may be reduced. Contact Carboline's Technical Service Department for further information.

Concrete

Contact Carboline's Technical Service Department 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

For immersion, blasting with sharp grit followed by the chemical surface treatment is required.

Note: On metallic surfaces prepared only by chemical etching, the total coating film thickness applied should be restricted to only half the film normally applied to blasted surfaces. This reduced film thickness should be considered during selection of the coating for the service and the type of surface preparation performed.

APPLICATION

Mixing

The curing agent and resin are supplied in separate containers at a 4:1 ratio. For splitting purposes, use one part curing agent to four parts resin by volume. Thoroughly mix resin, then add curing agent slowly and mix completely with resin. Allow a 30 minute induction time before using.

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 1500-1800 psi with tip size from 0.015-0.019 inches. Thinning requirements are more than for conventional spray.

Air supply shall be uncontaminated. Adjust air pressure to approximately 50 lbs. at the gun and provide 5-10 lbs. of pot pressure. Adjust spray gun by first opening liquid valve and then adjusting air valve to give an 8-12 inch 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, moving gun at fairly rapid rate, maintaining a wet appearing film. Observe the coating surface, and when it appears to be flowing together you will have an average 3-4 mil/75-100 microns wet film. By allowing the solvents to flash-off for a few minutes, several more fast multi-passes may be applied until you have a film thickness of approximately 4-5 mil/100-125 microns (approximately 10 wet mil/250 microns). Repeat this procedure for the second coat to obtain an 8-10 mil/200-250 microns DFT.

Overcoat time will vary both with temperature and ventilation and will require 8-12 hours at 70°F/21°C for enclosed spaces. Less time is required for exteriors. 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: Prior to spray application, stripe brush all welds, attachments and surface irregularities using PLASITE 7133 previously thinned a minimum of 50% by volume with PLASITE Thinner #71.

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 until sufficient film thickness is obtained. Normally a film thickness of 2.5-3 mil/62-75 microns can be obtained per coat by this method.

CURING

Surface will normally be tack-free in 2-3 hours at 70°F/21°C. Curing will take place in 5 days at 90°F/32°C or 7 days at 70°F/21°C. Force curing is required to prevent possible taste and odor pickup by sensitive food products.

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Normally, polymerization and curing will take place in 5 days at 90°F/32°C or 7 days at 70°F/21°C. This coating should not be applied when air temperature or temperature of surface to be coated is below 50°F/10°C. Within 24 hours after coating is applied, a minimum substrate temperature of 70°F/21°C is required for proper polymerization. Force curing is required for PLASITE 7133 when used in taste sensitive immersion service.

Force curing at elevated temperature is desirable for certain exposures. Where coating is to be subject to immersion in high temperature solutions, wine and beer and other severe exposures, it is recommended that the curing temperature be at 170°F-200°F/76-93°C. In order to ensure the complete removal of solvents and odor, force curing is generally recommended when coating is to be used in potable water and food material service.

Listed below are a few curing schedules that may be used for time and work planning. Prior to raising the metal to the force curing temperature, it is necessary that an air dry time of 2-5 hours at temperatures from 70°-100°F/21-37°C be allowed. After the air dry period has elapsed, the temperature should be raised approximately 30°F/18°C each 30 minutes until the desired force curing temperatures are reached.

METAL TEMPERATURE	CURING TIME	METAL TEMPERATURE	CURING TIME
150°F/66°C	12 Hrs	200°F/93°C	6 Hrs
175°F/79°C	10 Hrs	225°F/107°C	4 Hrs

Final cure may be checked by exposing coated surface to MIBK for ten minutes. If no dissolving and only minor softening of film occurs, the curing can be considered complete. The film should reharden after exposure if cured.

INSPECTION

Degree of surface preparation shall conform to appropriate specification 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 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 bulletin provides standard information on the coating and application procedure. Since varying conditions may not be covered, consult your local sales representative or Carboline Technical Service Department for further information.

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