product data

carboline®

PLASITE® 4140

Conductive Coating

TYPE
A vinyl ester resin combined with special curing system and inert electrically conductive pigments to provide outstanding chemical and physical properties.

INTENDED USE
A: As a high solids, highly electrically conductive coating for application to all nonconductive substrates prior to topcoating with one of the Plasite 7200 Series conductive coatings selected for the specific range of conductivity desired.

B: As a highly chemical resistant electrically conductive thick film coating for tank lining service and for coating of special equipment where the combination of chemical resistance and conductive film properties are required. Typical uses include electrostatic precipitators and other similar equipment. FOR INDUSTRIAL USE ONLY!

CHEMICAL RESISTANCE
Superior chemical resistance to organic and inorganic acids, oxidizing agents and salts. Provides better alkali resistance than polyester glass flake coatings.

TEMPERATURE RESISTANCE
Dry tests – 380°F continuous with occasional short excursions to 460°F acceptable. Wet temperature resistance depends upon concentration and reagent exposure.

APPLICATION
Plasite 4140 is formulated for standard production spray equipment. Airless spray is not recommended for Plasite 4140.

COLOR
Charcoal gray.

FILM THICKNESS
A: For application as a conductive base coat over nonconductive substrates prior to application of one of the Plasite 7200 Series coatings: 1 multi-pass spray coat will easily produce the 6 mil minimum DFT recommended.

B: For immersion and special equipment: 2 to 3 multi-pass spray coats will produce the 35 to 45 mil DFT recommended.

COVERAGE
A: When used as a base coat over nonconductive substrates: 130 ft^2/gallon will produce the 6 mil minimum DFT recommended.

B: For immersion and special equipment: 20 ft^2/gallon will produce the 40 mil DFT average recommended. This coverage is obtained from field use on small jobs and includes loss in can, spray loss, small amount of shrinkage, etc.

Recoating Time: Apply Plasite 7200 Series coatings as soon as practical after initial hardening which will normally occur in 3 to 10 hours depending on the surface temperature. Any topcoat should be applied within 15 days, and the topcoat should be diluted approximately 2 to 5% with the recommended thinner.

PHYSICAL SPECIFICATIONS

Pigments:……..…Inert electrically conductive fillers

Pot Life:…1 to 1 ½ hours in 1 gallon cans and 1 hour in 5 gallon cans at 70°F to 90°F MATERIAL temperature. MATERIAL temperature in excess of 90°F will significantly reduce pot life. CAUTION! Do not attempt to extend pot life by mixing newly catalyzed coating into coating near the end of its pot life.

Shelf Life:…Approx. 3 months at 70°F. Cooler storage temperatures will increase shelf life. Storage at higher temperatures can result in substantially shorter shelf life.

Shipping Weight:……Approx. 12 lbs. per gallon kit

Electrical Resistance:
Point-to-ground:……..……<1.0 ohm
Surface resistivity:……..…<1.0 ohm-square

Note: Resistance point-to-ground and surface resistivity determined within the context of methods and definitions of ASTM D-257, NFPA 99 and EOS/ESD STD 4. It is understood user must determine suitability for his own use.

Abrasive Resistance:…..10.2 milligrams average loss per 1000 cycles Taber CS-17 Wheel, 1000 gram weight

Note: Previously applied coating exposed to an accumulation of 24 hours of sunlight or surface temperatures in excess of 130°F may result in intercoat disbondment. An applied coating film should be topcoated before an accumulation of 24 hours exposure has occurred, or special procedures (such as shading with tarps) should be used.

CURING TIME
10 days at 70°F, or 7 days at 90°F. Consult Carboline Technical Service Department for force curing information.

VOC CONTENT

	Coating as Supplied (Determined Theoretically)		Thinned 5% by Volume with PLASITE Thinner #20 (Determined Theoretically)	
Color	**Lbs./Gal.**	**g/L**	**Lbs./Gal.**	**g/L**
Charcoal Gray	0.52 ± 4%	62 ± 4%	0.80 ± 4%	**97 ± 4%**

THINNERS
Use Plasite Thinner #20. Thinning 2 to 5% may be needed to adjust coating for higher temperatures and various application conditions. Topcoating of previously applied films will require the addition of 2 to 5% thinner. Consult Carboline Technical Service Department for unusual thinning requirements. See RECOATING TIME.

SURFACE PREPARATION
Concrete (Nonimmersion Service): Must be fully cured (28 days), clean and dry. Brush blast to remove laitance.

Wallboard and Other Nonconducting Substrates (Nonimmersion Service): Surfaces must be oil free, clean and dry.

Steel (Immersion Service): Blast surface to an SSPC-SP5 or NACE No. 1 white metal.
For coating 40 mils DFT the blast anchor profile shall be a minimum of 4 mils as determined by comparing Wisconsin Protective Coating's blasted panel using adequate light and magnification as required. Comparator panel is available on request from the WPCC laboratory.

EQUIPMENT
Atomizing Spray Equipment: Conventional atomizing spray system shall be equal to: Binks Model 18 Gun with 59ASS Fluid Nozzle, 251 Air Cap, 59SS Needle. Heavy-duty trigger spring recommended. Pot pressure of approximately 50 psi. Atomizing pressure of approximately 60 psi. (Use standard production type pressure pot with air motor drive agitator.)

Note: Application by conventional spray equipment may affect maximum film building capabilities and coverage rates.

Applicators may prefer to apply additional coats to achieve the 40 mil nominal DFT.

Brush Application: Brush application is not recommended but may be used for repairs or touch-up.

MIXING
The Promoter (Part B) and the Catalyst (Part C) are supplied in separate containers and are premeasured for the coating unit supplied. Thoroughly mix the Coating (Part A). After the pigments and liquid are thoroughly mixed, add the entire amount of the measured liquid Promoter (Part B). MIX COMPLETELY (no color streaking or residue of Part B should remain on container sidewalls). Add the Catalyst (Part C) and mix completely with the coating.

WARNING! The Promoter (Part B) and the Catalyst (Part C) must be separately mixed into the Coating (Part A). Any contact of unmixed Part B with Part C may lead to a fire or an explosion!

APPLICATION PROCEDURE
A minimum surface temperature of 70°F is required to obtain polymerization of the coating system. Coating can be applied at a surface temperature as low as 60°F but polymerization will not take place. Succeeding coats cannot be applied without damaging the system until the surface temperature rises sufficiently to obtain polymerization. Refer to CURIG TIME. When surface temperatures are over 100°F, consult the Carboline Technical Service Department for special thinner and thinning instructions.

The mixed coating shall be applied utilizing a multi-pass spray system. Apply horizontal and vertical passes with 50% overlap. Special precautions are required at overlaps and welds to eliminate excessive film build. Spray gun should be perpendicular to surface at all times, approximately 14" from surface. Refer to THINNERS.

Coatings may be overcoated after initial "set" which will occur normally in 3 to 6 hours at 70°F with proper ventilation. Initial "set" time will decrease as surface temperature increases. **WARNING!** Refer to RECOATING TIME.

When physical contact (foot traffic, scaffolding, etc.) with the previously applied coating is required, a minimum of 10 hours at 70°F substrate and air temperature with ventilation is normally required before proceeding. Previously applied coats must have reached a "non-tacky" state before being exposed to physical contact. This condition will occur in less time as surface temperature increases. Overcoating shall be performed as soon as possible to prevent contamination.

INSPECTION
Because of its electrical properties, the Plasite 4140 cannot be tested for pinholes using the standard high voltage equipment generally employed with most thick-film coatings. For high chemical resistance services, special care during application should be taken in order to produce the highest quality film possible. Consult Carboline Technical Service Department for additional details.

Carboline Laboratory has confirmed that the standard single probe magnetic thickness gauges perform within acceptable tolerances on Plasite 4140.

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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