product data

carboline®

PLASITE® 4007

Includes PLASITE 4007CI
Formerly PLASGUARD 4007

TYPE
A vinyl ester resin combined with glass and other inert pigments to provide a coating with excellent chemical resistance and is also available for catalyst injection spray equipment (identified as PLASITE 4007CI).

INTENDED USE
PLASITE 4007 (4007CI) is a high chemical resistant coating. May be used as a light colored topcoat for 4300 or as a multi-coat coating system with or without the option of incorporating fiberglass cloth reinforcement.

TEMPERATURE RESISTANCE
Dry film basis is 250°F/121°C to 300°F/149°C. Immersion temperature limits are determined by chemical exposure - please consult with Carboline Technical Service Department.

COLORS Off White and Lt. Gray.

COVERAGE
PLASITE 4007
53 to 56 ft^2 or 4.8 to 5 m^2/gal. at 15 mils/375 microns.

PLASITE 4007CI
80 to 84 ft^2 or 7.2 to 7.6 m^2/gal. at 15 mils/375 microns.

Coverage rate determined by application over flat steel surfaces. Coverage of PLASITE 4007 will be reduced when applied over surface irregularities. Application by conventional spray equipment may decrease coverage rate.

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**
4007 Lt. Gray/Off Wht	.15 ± 2%	18 ± 2%	.30 ± 2%	36 ± 2%
4007 CI Lt. Gray/Off Wht	.15 ± 2%	18 ± 2%	.30 ± 2%	36 ± 2%

FILM THICKNESS
One multi-pass spray coat will produce approximately 15 mils/375 microns DFT.
When PLASITE 4007 (4007CI) is used as a topcoat for 4300, a 40 mil/1000 microns system is recommended (i.e., 10 mils PLASITE 4007 applied over 30 mils/750 microns 4300).

When PLASITE 4007 (4007CI) is used as a lining in severe corrosive services (dilute acids, etc.), use of a 40 mil system applied in three coats is recommended.

When PLASITE 4007 (4007CI) is used as a lining in tank bottoms (i.e., petroleum tanks, etc.), a 30 mil/750 microns system applied in two coats is recommended. If necessary, PLASITE 4007 (4007CI) can be used in combination with fiberglass cloth at a total DFT of approximately 40 mils/1000 microns. Use .75 oz./ 21 g. fiberglass matt such as supplied by Ashland Distribution, Columbus OH. Where tank bottom is badly pitted or has other deficiencies requiring use of a caulking material, please consult Carboline's Technical Service Department for recommendation.

RECOATING TIME
PLASITE 4007
May be recoated after initial hardening or set which will normally occur in 3 to 6 hours at 75°F/24°C. Following coating must be applied within 30 days. It is recommended each following coat be diluted approximately 2% to 5% with Plasite Thinner #20.

PLASITE 4007CI
May be recoated after initial hardening or set which will normally occur in 1 to 2 hours at 75°F/24°C. Following coating must be applied within 30 days. It is recommended each following coat be diluted approximately 2% to 5% with Plasite Thinner #20.

PHYSICAL SPECIFICATIONS

Pigments: Coloring pigments and inerts.

Pot Life - 4007: 1 to 1½ hours in one gallon cans; 1 hour in five gallon cans at 70°F/21°C to 80°F/26.6°C material temperature. Material temperature in excess of 80°F/26.6°C will significantly reduce pot life. Careful monitoring is essential.

Pot Life – 4007CI: Not applicable – catalyst injected at spray gun.

Shelf Life: 60 days at 70°F/21°C. Cooler temperatures will increase shelf life. Storage at higher temperatures is not recommended and will result in substantially shorter shelf life.

Shipping Weight: Approximately 13 lbs/5.85 kg per gallon.

Abrasion Resistance: 57.32 milligrams average loss per 1000 cycles, Taber CS-17 Wheel, 1000 gram weight.

CHEMICAL RESISTANCE
Excellent resistance to organic and inorganic acids, salts, gasoline and crude oil.

Note: Previously applied coating exposed to sunlight or surface temperatures in excess of 130°F/54.4°C may result in intercoat disbondment. An applied coating film should be topcoated before an accumulation of 8 hours exposure has occurred, or special procedures (such as shading with tarps) should be used. Care must be taken to avoid contamination between coats.

CURING
PLASITE 4007: 10 days at 70°F/21°C or 7 days at 90°F/32.2°C. Although coating may be applied at substrate temperatures as low as 60°F/15.5°C, the substrate temperature must be raised to at least 70°F/21°C within 12 hours and held until coating surface is tack-free (approximately 10 hours) to avoid possible loss of cure. A minimum of 70°F/21°C surface temperature is required to obtain polymerization of this coating.

PLASITE 4007CI: 3 to 4 days at 50°F/10°C.

THINNERS
Use Plasite Thinner #20. Thinning of 2% to 5% may be required 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's Technical Service Department for unusual thinning requirements. See RECOATING TIME.

CLEANUP THINNER: Thinner #71

SURFACE PREPARATION
Steel - High Temperature and 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. Decontamination of used tanks may be required.

The surface shall be blasted to an SSPC-SP5/NACE No. 1 Joint Surface Preparation Standard blast grade using a Venturi blast nozzle with 100 psi/6.9 bars air. Use a properly graded, clean, sharp angular abrasive, similar to Humble Abrasive Flint S7 (6 to 30 mesh), Steel Grit (HG25), or BLACK BEAUTY® (BB1040) to produce the anchor pattern as required. The degree of profile shall be a minimum of4 mils/100 microns as determined by comparing Carboline's blasted panel, using adequate light and magnification as required. Comparator panel is available to inspectors on a job basis. If clarification is required as to how to develop this anchor

pattern, consult Carboline's Technical Service Department or local sales representative.

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

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.

Steel - Service in Severe Corrosive Environments - Splash & Fume
Surface preparation is the same as above except SSPC-SP10/NACE No. 2 Joint Surface Preparation Standard blast grade near white metal blast may be used provided the anchor pattern as described above is achieved.

Concrete
Immersion Service
All concrete surfaces require whip blasting for immersion service. Fully cured concrete (minimum 28 day cure) must be blasted to provide a hard, firm, clean and neutral surface for coating. All concrete surfaces must be filled and sealed with the appropriate Carboline filler sealer, applied in accordance with the corresponding Carboline product data sheet. All surface imperfections, "bug holes," etc. must be completely repaired before application of PLASITE 4007.

Strong Fumes and Splash Spill
Severity of expected service will dictate proper concrete surface preparation.
Contact the Carboline Technical Service Department for other than steel and concrete surfaces.

APPLICATION
Mixing
PLASITE 4007
The promoter (Part **B**) and 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 **B**l) 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!

PLASITE 4007CI
The promoter (Part **B**) and the catalyst (Part **C**) are supplied in separate containers. The promoter (Part **B**) is premeasured for the coating unit supplied. The catalyst (Part **C**) is available in either 1 quart or 1 gallon containers. 2% or 2½ liquid oz. (by volume) of peroxide catalyst (Part **C**) is recommended per gallon of PLASITE 4007CI. One gallon of Part **C** peroxide catalyst will catalyze approximately 50 gallons of PLASITE 4007CI.

Thoroughly mix the coating (Part I). After the pigment 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). Adjust Part **C** and material delivery pumps to provide a catalyst delivery rate of 2% or 2½ liquid oz./83 milliliters per gallon (by volume) of PLASITE 4007CI. Do not exceed 3 liquid ounces/100 milliliters of catalyst per gallon of PLASITE 4007CI.

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!

Spray
PLASITE 4007
Atomizing Spray Equipment
Conventional atomizing spray system shall be equal to: Binks Model 2001 Gun with 59ASS Fluid Nozzle, 251 Air Cap, 559SS Needle. Heavy-duty trigger spring recommended. Pot pressure of approximately 50 psi/3.5 bars. Atomizing pressure of approximately 60 psi/4 bars.

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.

Airless Spray Equipment
Airless spray system requires a large capacity pump with a capacity of 3 g.p.m. similar or equal to: Graco Bulldog with 0.025" or larger fluid nozzle, 12" minimum spray width is recommended. Use liquid pressure of approximately 1600 to 1800 psi/100 to 124 bars. All screens should be removed from pump and gun. A 3/8" diameter fluid line is recommended.

Note: Brush application is not recommended but may be used for repairs or touch-up. Contact Carboline's Technical Service Department for brush directions.

PLASITE 4007CI
Use standard catalyst injection equipment, such as the Venus HIS 808000 Air Assisted Internal Mix System, or Binks Model 105-1248 Cart Mounted Super Slave Gel Coat/Wetout System. In lieu of the discontinued model, 105-1248, Binks Model 103-1718 Super Slave Pump ASS'Y may be used. Use a 2650 spray tip (Part #108-92609) and a Century gun Model 102-2450.

The Venus CI equipment is distributed in the Wisconsin, Illinois, Michigan and Ohio areas by GLS Fiberglass, Goshen, Indiana. For other area distributors, contact Venus-Gusmer, Kent, Washington.

For the Binks equipment, contact any Binks Plastic Resin Equipment Distributor or the FRP Engineering Department of ITW Poly-Craft, Glendale Heights, IL.

Note: The abrasive nature of the glass pigment within PLASITE 4007/4007CI results in above normal wear to airless equipment lower units.

PLASITE 4007
A minimum surface temperature of 70°F/21°C is required to obtain polymerization of the coating system. Coating can be applied at a surface temperature as low as 60°F/15.5°C 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 CURING TIME. When surface temperatures are over 100°F/37.8°C, consult 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 section. Coating may be overcoated after initial "set" which will occur normally in 3 to 6 hours at 70°F/21°C with proper ventilation. Initial "set" time will decrease as surface temperature increases.

PLASITE 4007CI
A minimum surface temperature of 50°F/10°C is required to obtain polymerization of the coating system. Refer to CURING TIME. When surface temperatures are over 100°F/32.2°C, consult 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% 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"/35.5 cm from surface. Refer to THINNERS section. Coating may be overcoated after initial "set" which will occur normally in 1 to 2 hours at 75°F/24°F with proper ventilation. Initial "set" time will decrease as surface temperature increases.

WARNING! Refer to RECOATING TIME. When physical contact, such as foot traffic, scaffolding, etc., with the previously applied coating is required, a minimum of 10 hours at 70°F/21°C 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.

LINING REPAIR
Clean damaged area, removing all contaminants and loose coating.

Abrasive blast substrate to original specification where coating has been exposed to environment and where oxidation is evident.

Feather the original coating not less than 2"/5 cm. from damaged area.

If new coating is physically damaged and has not been in service, repair as shown above. For repairing holidays, sand surface and brush apply proper thickness of coating.

Apply coating by brush or spray. Do not apply by brush on areas larger than 1 square foot/0.09 sq. m..

Note: Contamination of previously exposed coating film may be detrimental to adhesion of the repair and may affect service life expectancy.

INSPECTION
For immersion service, a pinhole-free film is essential and testing with a Tinker Rasor Model AP-W or Stearns Model 14/20 or equivalent is required on final film. Use 3000 volts at the recommended 30 mil/750 microns dry film thickness.

This product 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.

SAFETY
READ THIS NOTICE
SAFETY AND MISCELLANEOUS EQUIPMENT

For tank lining work and 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 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.

The coating system may be handled safely by trained personnel following normal laboratory and plant standards for housekeeping and personal hygiene. In the event of skin contact complications, the affected areas should be washed with soap and water. Eye protection is recommended. Work in well ventilated areas away from open flame. In enclosed areas, although ventilated, fresh air masks should be provided.

The catalyst (Part **C**) is relatively stable at room temperatures but must be protected from contamination, heat, fire and contact with promoter (Part **B**). The catalyst (Part **C**) is classified by the Interstate Commerce Commission as an "oxidizing material." All shipping containers bear a yellow caution label. The catalyst is highly irritating if it gets into the eyes. Immediately rinse eyes thoroughly with water and get medical attention. The catalyst also can be a skin irritant and should be removed with large quantities of soap and water. Since this is an oxidizing material, it should not be allowed to accumulate or remain in soaked rags or clothing.

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

PLASITE® 4007

350 Hanley Industrial Court, St. Louis, MO 63144-1599
314/644-1000 314/644-4617 (fax) www.carboline.com

An RPM Company

May 2005 replaces September 2004