

SELECTION & SPECIFICATION DATA

Generic Type	High performance epoxy
Description	PLASITE 4500 FS is a solvent-free, edge retentive and high performance epoxy coating designed as an internal tank lining for chemical or other commodity storage. It is a two-component system applied by plural component spray equipment, at film thicknesses of 20-60 mils (500-1500 microns) in a monolithic application. It is particularly suited for petroleum-based cargoes including crude oil; fuel oils and gasoline storage. It has extremely fast cure times for turnaround projects that require placing back in service quickly and will cure down to 20F(-7C). The product has a unique ability to be applied as a prime coat and immediately back-rolled after spraying. This is recommended to treat pitted steel, weld areas, and the like. A second coat can be applied right after the prime coat using the same product for a "two-coat" yet monolithic application.
Features	• Quick walk on time • Fast return to service • Excellent edge retention • Superior adhesion to steel • Resistance to a broad range of chemicals • Will cure down to 20°F/-7°C • Can be applied as a single-coat 20-60 mil system • Passes EI 1541 jet fuel gum test.
Color	Standard: 0800 (White), 0200 (Brown)
Finish	Gloss
Dry Film Thickness	20 - 30 mils (508 - 762 microns) per coat Film thickness depends on service and existing condition of the substrate, PLASITE 4500 FS is typically applied in a single coat application at the appropriate film thickness depending on the application. Typical film thickness is 20-30 mils however higher film thicknesses can be used for more aggressive or abrasive conditions. Additional coats may be applied as needed.
Solids Content	By Volume 100%
Theoretical Coverage Rate	1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns) 80 ft²/gal at 20.0 mils (2.0 m²/l at 500 microns) 53 ft²/gal at 30.0 mils (1.3 m²/l at 750 microns) Allow for loss in mixing and application.
VOC Values	As Supplied : 0.02 lbs/gal (3 g/l)

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating
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SUBSTRATES & SURFACE PREPARATION

Steel | Immediately prior to application of the coating or lining, the steel substrate must be clean of all oil, grease, dirt, dust, mill scale, rust, flash rust, corrosion products, salts, solvents, chlorides, other chemicals and existing coatings. Welds must be smooth and continuous with weld splatter, buckshot, laminations and slivers removed and ground smooth. Undercuts and pinholes must be ground smooth and filled with weld metal. All projections, sharp edges, high points and fillets must be ground smooth to a radius of at least 1/8 in.(0.32 cm) and corners must be likewise rounded. Pitting, gouges, scratches, and other defects must be repaired either by welding or by filling with repair materials that are compatible with the coating or lining system and suitable for the intended service conditions.
For immersion applications steel must be blasted to a minimum Near-White Metal Finish (NACE NO. 2; SSPC SP10) with a minimum 3 mil (75 micron) dense, sharp anchor profile free of peening, as measured by ASTM D 4417. Defects exposed by blasting must be repaired.

Concrete | Concrete shall be designed, placed, cured, and prepared per NACE No. 6/SSPC-SP 13, latest edition. Abrade to remove all laitance, loose concrete, etc. and to create surface profile in accordance with the appropriate ICRI CSP 4-7. Do not apply coating unless concrete has cured at least 28 days @ 70°F (21°C) or equivalent. Voids in concrete may require filling and/or surfacing. Consult Carboline Technical Service for recommended primer/sealer.

MIXING & THINNING

Mixing | This product requires plural component spray equipment with multi-stage static mixers. It is recommended that two separate static mixers be used to ensure complete mixing.

Component Details for Colors:
Tan: The Part A is clear (0909) and the Part B is tan (0200)
White: The Part A is clear (0909) and the Part B is white (0800)

Ratio | 1:1 Ratio (A to B)

Pot Life | 8-15 minutes @75°F (24°C); and less at higher temperatures

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

General | Before mixing and applying any material, make sure environmental conditions are satisfactory for application. Weather conditions, and especially dew point, should be constantly monitored in light of the work being done. Final blast cleaning and application of the lining system must only be performed when it is clear the temperature of the steel substrate will not fall within 5°F (3°C) of the dew point. Dehumidification and/or temperature control may be necessary to meet this requirement. Use a surface thermometer to frequently monitor the temperature of the steel substrate.

Airless Spray | Use a fixed ratio (1:1 by volume) plural component spray rig with heated hoppers, heated hoses to a mixer manifold through (at least two) static mixers to a 15 to 25 ft ¼" whip hose (depending on tip size used) attached to an appropriate spray gun utilizing self-cleaning reverse "a" tips from 0.017-0.035 inches.
Note: Both the "A" and "B" side should be around 100-110°F/38-43°C. This will ensure proper catalyzation and spraying of Plasite 4500 FS.

Take care to prevent the mixed material from setting up in your hoses. For best results, keep hoses as short as possible, purge them immediately if work is interrupted, keep them out of direct sunlight and insulated from hot surfaces.

APPLICATION PROCEDURES

Airless Spray

Immediately before applying a spray coat, stripe all continuous welds and edges with a brush-coat to assure adequate protection of these areas. All spray equipment should be clean and in proper working order. Contact Technical Service for start-up and clean-up procedures. Adjust pressure to 50-70 psi and open the valves at the manifold and purge materials at the spray gun. Attach spray tip and begin to spray. Dependent upon tip size, each pass will be 8-14 mil/200-350 microns per pass.

Apply material to specified thickness. Apply criss-cross multi-passes, moving gun at a fairly rapid rate, maintaining a wet appearing film. Use a wet film thickness gauge to monitor film build.

Before any touch-up or recoat material can be applied, the first coat must be properly prepared for intercoat adhesion.

The first coat must be cured firm to the touch. Coating on floors must be able to support foot traffic. Any surface to be touched up or recoated should be protected. When the recoat material is applied, the surface must be dry and free of all dirt, dust, debris, oil, grease and other contamination.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	100°F (38°C)	20°F (-7°C)	20°F (-7°C)	0%
Maximum	120°F (49°C)	130°F (54°C)	100°F (38°C)	85%

This product simply requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.

CURING SCHEDULE

Surface Temp.	Cure for Service	Maximum Recoat
20°F (-7°C)	4 Days	15 Days
35°F (2°C)	2 Days	15 Days
50°F (10°C)	24 Hours	15 Days
75°F (24°C)	12 Hours	15 Days
90°F (32°C)	8 Hours	15 Days

Cure for Service: The chart above is to be used as a guideline. When the film passes a 25 solvent double-rub* (MEK); the lining is suitable for immersion service. *No color pick-up but down-glossing is acceptable"

Cure for service times are dependent on substrate surface temperatures and material temperatures. Material temperature should be in the 100-110°F range to initiate reaction and take advantage of the fast cure speeds of this formulation. Cure to service is typically within 24 hours; however when cured at low temperatures solvent resistance (rub test) will lengthen to 2-4 days or longer. For some services/cargos solvent rub resistance to a less aggressive solvent like xylene may be used to determine when the lining is suitable for service. Consult Carboline for specific applications or exposures. For recoating, if the product has exceeded the maximum recoat time, de-gloss and roughen by light sanding or mechanically abrade the surface and remove dust prior to topcoating.

CLEANUP & SAFETY

Cleanup

Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Safety

Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions.

Plasite® 4500 FS

PRODUCT DATA SHEET



CLEANUP & SAFETY

Ventilation	While this is a solventless epoxy, it is common practice when used as a tank lining or in enclosed areas to circulate the air during and after application until the coating is cured. Follow all current OSHA requirements for respirator use.
Caution	If product is thinned with flammable solvents, keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Packaging	10 Gallon Kit: Part A: 1 x 5 Gallons Part B: 1 x 5 Gallons 100 Gallon Kit: Part A: 1 x 50 Gallons (drum) Part B: 1 x 50 Gallons (drum)
Shelf Life	Part A: Min. 9 months at 75 °F (24 °C) Part B: 12 months at 75 °F (24 °C)
Storage Temperature & Humidity	40° - 110°F (4°-43°C) 0-90% Relative Humidity
Storage	Store indoors
Shipping Weight (Approximate)	Weight Per Gallon: 11.7 lbs (5.3 kg) packaged in 2 and 10-gal kits.
Flash Point (Setaflash)	Part A: 205°F (96°C) Part B: 201°F (94°C)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.