

# Amercoat® 385

385 Series

Multi-purpose epoxy

## Product Data/ Application Instructions

- Multi-purpose high build epoxy
- High solids high build epoxy intermediate
- Primer for durable systems with wide range of topcoats, including polyurethanes and acrylics
- Ballast water tanklining
- High build anti-corrosive coating for ship hulls
- Excellent shop primer for corrosive service
- Suitable for immersion service
- Outstanding chemical and weather resistance
- Excellent adhesion to inorganic zinc silicate
- Easy application
- Contains no lead or chromate pigments
- Low VOC
- Wide film build range
- Compatible with a variety of substrates and surface preparations

Amercoat 385 is a high-performance epoxy coating forming a tough, abrasion-resistant, durable film. It adheres strongly to bare steel, coated steel and inorganic zinc silicate primed surfaces on new construction, repair and field maintenance projects. Amercoat 385 will also adhere to intact painted surfaces and tight rust and may be used to repair itself or inorganic zinc silicate primers.

Amercoat 385 provides an excellent barrier to corrosion; its inhibitive pigment version (385PA) affords corrosion inhibition at damaged areas. It has good chemical resistance, making it suitable for use in aggressive environments. Amercoat 385 is user-friendly and can be applied by a variety of methods to produce a smooth, fast-drying film. It is suitable for immersion in both salt and fresh water at temperatures up to 140°F, continuous and can be used as a tank lining for alkaline and salt solutions, petroleum fuels, and certain chemicals.

Amercoat 385 may also be applied over aluminum, stainless steel, galvanizing, concrete and previously coated surfaces in addition to carbon steel.

Amercoat 880 glassflake may be added to increase film build and lower moisture vapor permeability. For additional information see Amercoat 880 Product Data Sheet or contact your PPG representative.

### Typical Uses

- Decks, hulls and superstructures of ships, barges and work boats.
- Piers, offshore platforms and related structures.
- Tank exteriors in oil refineries, paper mills, chemical processing facilities and waste water treatment plants.
- Tank lining.
- Industrial structural steel, machinery and piping.

## Physical Data

Finish	Flat	
Color	PPG standard colors See color card	
Amercoat 385	Oxide red, buff	
Amercoat 385PA Inhibitive pigment		
Components	2	
385 or 385PA		
Curing mechanism	Solvent release and chemical reaction between components	
Volume solids (ASTM D2697 modified)	68% ± 3%	
385 or 385PA		
Dry film thickness per coat	4 to 8 mils (100 to 200 microns) 6 to 14 mils (150 to 350 microns)	
385 or 385PA with 880 glassflake		
Coats	1 or 2	
Theoretical coverage	ft <sup>2</sup> /gal	m <sup>2</sup> /L
385 or 385PA		
1 mil (25 microns)	1090	26.7
4 mils (100 microns)	272	6.6
<i>385 with 880 at 6 mils (150 microns) will be 185 ft<sup>2</sup> per gallon.</i>		
VOC	lb/gal	g/L
(EPA method 24)		
385 mixed	2.3	276
385 mixed/thinned	2.6	311
Temperature	Wet	Dry
	°F	°C
continuous	140	60
intermittent	175	79
Flash point (SETA)	°F	°C
385 cure	118	48
385 resin	128	53
Amercoat 861	300	149
Amercoat 65	81	27
Amercoat 101	145	63
Amercoat 12	2	-17

## Qualifications

Military Sealift Command	Underwater hulls, topside and salt water ballast tank service.
NAVSEA	Chapter 631 for aluminum hull use
USDA	Incidental Food Contact
MIL-P-23236C	Dedicated Sea Water Ballast only.

## Typical Properties

### Physical

Abrasion (ASTM D4060) 1 kg load/1000 cycles CS-17 wheel	108 mg weight loss
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Adhesion, Elcometer (ASTM D4541)	>1000 psi
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### Performance

Salt spray – 1 coat @ 6 mils 5000 hours exposure	
face corrosion (ASTM B117)	None
face blistering (ASTM B117)	None
Humidity (condensation) (ASTM D4585) 3000 hours exposure	
face corrosion	None

Steam cleanable	Yes
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Chemical resistance – Condition after 1 year immersion	
caustic 30%, 50% up to 140°F	Excellent
fuel (MSC recipe)	Excellent
salt water	Excellent
DI water up to 140°F	Excellent

## Amercoat 385 Chemical Resistance Guide

Environment	Splash and Spillage	Fumes and Weather
Acidic	F	G
Alkaline	E	E
Solvents	E	E
Salt solutions		
Acidic	G	VG
Neutral	E	E
Alkaline	E	E
Water	E	E

F-Fair G-Good E-Excellent VG-Very Good

*This chart shows typical resistance of Amercoat 385. Contact your PPG representative for your specific requirements.*

## Systems Using Amercoat 385

1st Coat	2nd Coat	3rd Coat
Amercoat 385 or 385PA	–	–
Amercoat 385 or 385PA	Amershield™	–
Amercoat 385 or 385PA	450 Series	–
Dimetcote® 9 Series	385	Amershield, 450 Series
Amercoat 68 Series	385	Amershield, 450 Series
Amercoat 385	385	ABC 3, ABC 4

*Confirm compliance with VOC regulations before using coating systems. For immersion service, apply 2 coats at a minimum of 8 mils total DFT.*

*Over Dimetcote, and Amercoat 68 Series primers, a mist coat/full coat and thinning with Amercoat 101 may be required to prevent application bubbling.*

*Use Amercoat 385PA primer when inhibitive pigmented primer is specified as the first coat.*

*Use Amercoat 385PA oxide red when MIO pigment is specified.*

## Application Data

Applied over substrates	Steel, concrete, masonry block, aluminum, galvanizing, coated surfaces
Primer/s	See Systems Table
Method	Airless, conventional spray, brush or roller

Mixing ratio (by volume) 385 or 385PA	1 part resin to 1 part cure
385 with 880 glassflake	1-gal 880 per mixed 2-gal 385 5 gal 880 per mixed 10-gal 385

### Pot life (hours)

	90/32 °F/°C	70/21 °F/°C	50/10 °F/°C
385 or 385PA	1½	3	5
385 with 880 glassflake	1½	2½	4

### Environmental conditions

Temperature	°F	°C
air and surface	32 to 120	0 to 49

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation.

### Drying time (ASTM D1640) @ 6 mils, DFT (hours)

	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2	3	6
through	10	16	24	168
with 880 glassflake	12	18	26	192

### Topcoat or recoat time

minimum	6	8	10	72
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*Addition of 861 Accelerator does not change dry-to-touch or dry-through times but does accelerate cure for service.*

### Topcoat or recoat time

(days) (maximum)	°F/°C		
	90/32	70/21	50/10

### Product

450 Series or Amershield™	14	30	42
385 or 385PA non-immersion*	No maximum*		
immersion*	6 months – high pressure water wash and roughen surface if exceeded		

*\*When surface is cleaned with Prep 88 according to the instructions.*

*Drying times are dependent on air and surface temperatures as well as film thickness, ventilation and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures - not simply ambient air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window.*

ABC® 3, or ABC 4, Apply while 385 is soft to thumb pressure

*Failure to apply antifouling while coating is still soft to thumb pressure may result in poor adhesion and eventual delamination.*

Time before service @ 8 mils (hours)	°F/°C			
	90/32	70/21	50/10	32/0
385 or 385PA immersion				
ambient	24	48	72	240
hot	72	168	336	NR
non-immersion	12	24	36	168

### Thinners (up to ½ pt)

above 70°F (21°C)	Amercoat 101
below 70°F (21°C)	Amercoat 65

*In confined areas thin with Amercoat 101*

Equipment cleaner	Thinner or Amercoat 12
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Adhere to all application instructions, precautions, conditions and limitations to obtain the maximum performance. When used over recommended primers, refer to application instructions for the specific primer being used for surface preparation data and application and drying procedures. For conditions outside the requirements or limitations described, contact your PPG representative.

## Surface Preparation

Coating performance is proportional to the degree of surface preparation. Refer to specifications for the specific primer being used. Prior to coating, primed surface must be clean, dry, undamaged and free of all contaminants including salt deposits. Round off all rough welds and remove all weld spatter.

**Steel** – Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required: SSPC-SP2, 3, 6 or 7. For more severe service and immersion, clean to SSPC-SP10. SSPC-SP12 (WJ-2L) is also acceptable over a previously blasted surface. The maximum soluble salt content for saltwater immersion should be 3 µg/cm<sup>2</sup>. For freshwater immersion, the limit is 2 µg/cm<sup>2</sup>. For atmospheric exposure, it can be as high as 10 µg/cm<sup>2</sup>. The choice of surface preparation will depend on the system selected and end-use service conditions.

Blast to achieve a dense, angular anchor profile of 1-2 mils (25-50 microns) as indicated by a Keane-Tator Surface Profile Comparator or Testex Tape. Increase coating thickness if profile greater than 3 mils.

**Galvanizing** – Remove oil or soap film with neutral detergent or emulsion cleaner; then use zinc treatment such as Galvaprep® or equivalent or blast lightly with fine abrasive.

**Aluminum** – Remove oil, grease or soap film with neutral detergent or emulsion cleaner; treat with Alodine® 1200, Alumiprep® or equivalent or blast lightly with fine abrasive.

**Concrete/masonry** – Surface must be cured, clean, dry, free of contamination and disintegrated or chalky materials. Clean concrete surface; abrasive blast (ASTM D4259) or acid etch (ASTM D4260). Fill concrete voids with Amercoat 965 or 114A to achieve a smooth surface. Clean masonry surface by ASTM D4261. Fill masonry block with Amerlock® 400BF Block Filler.

**Aged coatings** – All surfaces must be clean, dry, tightly bonded and free of all loose paint, corrosion products or chalky residue. Clean by low pressure water cleaning (1000 psi, min.), SSPC-SP1, 2, 3 or 7. Amercoat 385 is compatible over most types of properly applied and tightly adhering coatings. However, a test patch is recommended to confirm compatibility.

**Repair** – Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating. Thoroughly remove dust or abrasive residue before touch up.

## Application Equipment

**Airless spray** – Standard equipment such as Graco Bulldog or larger with a 0.15- to 0.021- in. (0.38 to 0.53 mm) fluid tip.

**Conventional spray** – Industrial equipment such as DeVilbiss MBC or JGA spray gun with 78 or 765 air cap and “E” fluid tip, or Binks No. 18 or 62 gun with a 66 x 63PB nozzle set up. Separate air and fluid pressure regulators, and a moisture and oil trap in the main air supply line are recommended.

**Power mixer** – Jiffy Mixer powered by an air or an explosion-proof electric motor.

**Brush** – Natural bristle. Maintain wet edge.

**Roller** – Use industrial roller. Level any air bubbles with bristle brush.

## Application Procedure

Amercoat 385 or 385PA consists of two components which must be mixed together before use. It is packaged in the proper portions in 2- or 10-gallon units.

1. Flush equipment with thinner or Amercoat 12 before use.
2. Stir each component thoroughly, then combine resin and cure and mix until uniform. When using Amercoat 880 glassflake, add material to mixed unit of Amercoat 385 following 880. Instructions for use.
3. Thin only if necessary for workability, add Amercoat 101 up to ½ pint (approximately 6%) per gallon of Amercoat 385. Use Amercoat 65 when faster drying is desired. Use Amercoat 101 when applying in confined spaces. Use only PPG recommended thinners.
4. Do not mix more material than will be used within pot life. Pot life is shortened by higher temperatures.
5. For conventional spray, use adequate air pressure and volume to ensure proper atomization.
6. Apply a wet coat in even, parallel passes; overlap each pass 50 percent. If required, cross-spray at right angles to avoid holidays, bare areas and pinholes.  
**Note:** When applying directly over inorganic zincs or zinc-rich primers, a mist coat/full coat technique may be required to minimize bubbling. This will depend on the age of the primer, surface roughness, and environmental conditions during application and curing.
7. When applying antifouling coatings, apply first antifouling coat while Amercoat 385 is still soft to thumb pressure. Failure to apply antifouling while Amercoat 385 is still soft may result in poor adhesion between coatings and eventual delamination of the antifouling.
8. Normal recommended dry film thickness per coat is 4 to 6 mils for 385 and 6 to 14 mils for 385 with 880. However, if greater thickness is applied in local areas because of overlapping, no runs or sags will normally occur at a dry film thickness up to 10 mils for 385 and 16 mils for 385 with 880. Total dry film thickness in two coats must not exceed 16 mils for 385 and 32 mils for 385 with 880.
9. A wet film thickness of 6 mils (150 microns) normally provides 4 mils (100 microns) of dry film.
10. When using brush or roller application method, additional coats may be required to achieve proper film thickness.
11. When a pinhole-free film is required, check film continuity of material with a nondestructive holiday detector such as Tinker and Razor Model M-1. Apply additional Amercoat 385 to areas requiring touch up.
12. Clean all equipment with thinner or Amercoat 12 immediately after use.

## Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

**CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion. Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.**

**This product is to be used by those knowledgeable about proper application methods. PPG makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which PPG is unaware and over which it has no control.**

**If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.**

**Note:** Consult Code of Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

***This product is for industrial use only. Not for residential use.***

## Shipping Data

Packaging	2- and 10-gal units	
385 or 385PA		
Shipping weight (approx.)	lb	kg
385 or 385PA 2-gal unit		
cure 1 gal in 1-gal can	12	5.6
resin 1 gal in 1-gal can	13	6.0
385 or 385PA 5-gal unit		
cure 5 gal in 5-gal can	61	27.7
resin 5 gal in 5-gal can	60	27.3

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)  
cure, resin and paste 1 year from shipment date

Numerical values are subject to normal manufacturing tolerances, color and testing variances. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions.

The mixed product is photochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.



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Marine Coatings**  
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