AMERON
INTERNATIONAL
Performance Coatings & Finishes

Amercoat® 230

High build epoxy coating

Product Data/ Application Instructions
(For Marine & Offshore use)

- Outstanding resistance to sea water and fresh water
- Tough and rugged. Will resist wear and abrasion, providing extended corrosion protection
- High volume solids and high build capability equate to lower costs than many lesser coatings for both repair and new construction
- Minimal surface preparation required
- Thick film readily applies by airless spray in one application. Self-priming
- Use for all heavy-duty corrosion control needs
- Non-bleeding
- Provides maximum resistance to impressed current
- Use cold weather additive for application down to 25°F (-4°C); Amercoat 861 at 1 pt per mixed 5 gallons of coating

Amercoat 230 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 230 will also adhere to intact painted surfaces and tight rust and may be used to repair itself or inorganic zinc silicate primers.

Amercoat 230 provides an excellent barrier to corrosion. It has good protection to chemical resistance, making it suitable for use in aggressive environments. Amercoat 230 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, sewage waste and certain chemicals.

Amercoat 230 may also be applied over aluminum, stainless steel, galvanizing, concrete and previously coated surfaces in addition to steel.

Typical Uses

Ships, offshore, and marine structures
- Above and below-water hull areas
- Decks and superstructures
- Dry cargo holds
- Wet voids
- Platforms, pilings, and docks
- Ballast water tanks
- Multi-purpose repair coating

Physical Data

Finish	Semigloss	
Colors	Haze Gray, Off White, Oxide Red, Black	
Components	2	
Curing mechanism	Solvent release and chemical reaction between components	
Volume solids (ASTM D2697)	71% ± 3%	
Dry film thickness per coat	4 - 8 mils (100 - 200 microns)	
Coats	1 or 2	
Theoretical coverage Amercoat 230	ft^2/gal	m^2/L
1 mil (25 microns)	1139	28.1
VOC (EPA method 24)	lb/gal 2.1	g/L 252

Temperature	Wet °F	Wet °C	Dry °F	Dry °C
continuous	140	60	200	93
intermittent	175	79	250	121

Flash point (SETA)	°F	°C
Amercoat 230 base	93	34
Amercoat 230 converter	100	38
Amercoat 230 mixed	100	38
T-10	80	27
Amercoat 101	145	63
Amercoat 12	2	-17

Qualifications

Military Sealift Command and NAVSEA	Underwater hulls, topside salt water ballast tank service Chapter 631 for aluminum hull use

MIL-P-24647 and Chapter 631, Table 631-8-10, keel to rail and exterior topside

Typical Properties

Physical

Abrasion (ASTM D4060) 1 kg load/1000 cycles CS-17 wheel	130 mg weight loss
Adhesion, Elcometer (ASTM D4541)	950 psi

Performance

Salt spray – 1 coat @ 6 mils 5000 hours exposure	
face corrosion (ASTM B117)	None
face blistering (ASTM B117)	None
Humidity (condensation) (ASTM D2247) 1000 hours exposure	
face corrosion	None
Steam cleanable	Yes
Water resistance	Excellent

Formerly Devran® 230

Amercoat 230 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 230. Contact your Ameron representative for your specific requirements.

Systems Using Amercoat 230

1st Coat	2nd Coat	3rd Coat
Amercoat 230	–	–
Amercoat 230	Amershield™	–
Amercoat 230	Amercoat 450HS or 450SA	–
Dimetcote® 9, 9FT, 9HS, 302, 302H	Amercoat 230	Amershield, 450HS or 450SA
Amercoat 68A, 68HS,	Amercoat 230	Amershield, 450HS or 450SA
Amercoat 230	Amercoat 230	ABC #1, 279, 275E, 277E, ABC #2, 3, or 4

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

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)	
Amercoat 230	4 part base to 1 part converter
Amercoat 230 with Amercoat 880 glassflake	1-gal 880 per mixed 1-gal 230 $2^{1}/_{2}$ gal 880 per mixed 5-gal 230

Pot life (hours)

°F/°C	90/32	70/21	50/10
Amercoat 230	2	4	6
Amercoat 230 with Amercoat 880 glassflake	2	$3^{1}/_{2}$	5

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	32/0
touch	1	2	3	6	--
through	8	12	22	32	--
Topcoat or recoat time					
minimum	4	7	15	23	32

Topcoat or recoat time (maximum)

°F/°C	90/32	70/21	50/10	40/5	32/0
Product (days)					
Amercoat 450HS or Amerhield™	3	14	16	18	20
Amercoat 230	90	90	90	--	--
ABC® #1, 2, 3, 4, Amercoat 635A, 275E, 279, 277E,	Apply while Amercoat 230 is tacky, soft to fingernail				

Failure to apply antifoulings while coating is still tacky or soft to fingernail may result in poor adhesion and eventual delamination.

Equipment cleaner Thinner or T-10

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 Ameron 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. Water blasting is also acceptable. For more severe service and immersion, clean to SSPC-SP10. The choice of surface preparation will depend on the system selected and end-use service conditions.

Blast to achieve an 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 Nu-Klad® 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 pressure water blast (1000 psi or greater), SSPC-SP1, 2, 3 or 7. Amercoat 230 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, mechanical pot agitator, 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 230 consists of two components which must be mixed together before use. It is packaged in the proper portions in 2- or 5-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.
3. Thin only if necessary for workability, add Amercoat 101 or T-10 up to $^{1}/_{2}$ pint (approximately 6%) per gallon of Amercoat 230. Use only Ameron 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.
7. When applying antifouling coatings, apply first antifouling coat while Amercoat 230 is still tacky or soft to fingernail. Failure to apply antifouling while Amercoat 230 is still tacky may result in poor adhesion between coatings and eventual delamination of the antifouling.
8. Normal recommended dry film thickness per coat is 4 to 8 mils for Amercoat 230. 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. Total dry film thickness in two coats must not exceed 20 mils.
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 used as a tank lining, check film continuity of material with a nondestructive holiday detector such as Tinker and Rasor Model M-1. Apply additional Amercoat 230 to areas requiring touch up.
12. Clean all equipment with thinner or Amercoat 12 immediately after use.

Shipping Data

Packaging	1 - and 5-gal units	
	1-gal	5-gal
base	0.8	4
converter	0.2	1
Shipping weight (approx.)	lb	kg
1-gal		
base	10.2	4.6
converter	1.9	0.9
5-gal		
base	50.3	22.8
converter	8.6	3.9
Shelf life when stored indoors at 40 to 100°F (4 to 38°C)		
base, converter	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.

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. Ameron 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 Ameron 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.

Warranty

Ameron warrants its products to be free from defects in material and workmanship. Ameron's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at Ameron's option, to either replacement of products not conforming to this Warranty or credit to Buyer's account in the invoices amount of the nonconforming products. Any claim under this Warranty must be made by Buyer to Ameron in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify Ameron of such nonconformance as required herein shall bar buyer from recovery under this Warranty.

Ameron makes no other warranties concerning the product. No other warranties, whether express, implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply. In no event shall Ameron be liable for consequential or incidental damages.

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Limitation of Liability

Ameron's liability on any claim of any kind, including claims based upon Ameron's negligence or strict liability, for any loss or damage arising out of, connected with, or resulting from the use of the products, shall in no case exceed the purchase price allocable to the products or part thereof which give rise to the claim. **In no event shall Ameron be liable for consequential or incidental damages.**

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