



Amershield™ VOC



Aliphatic polyurethane coating

Amershield Series

Product Data/ Application Instructions

- Complies with SCAQMD Rule 1113
- Unique, high-solids, high-build, multifunctional coating
- High-gloss, self-priming coating
- Excellent gloss retention
- Direct to metal and concrete in selected environments
- Outstanding abrasion, reverse and direct impact resistance
- Good chemical and stain resistance
- Tough and flexible coating

Amershield VOC displays high gloss and excellent color and gloss retention during extended service periods. The direct-to-metal capabilities of Amershield VOC provide a single-coat system at reduced installation cost for use in protected environments. Compatible over prepared, smooth cold-rolled steel and abrasive blasted hot-rolled steel.

Amershield VOC has excellent adhesion to concrete providing a durable, glossy, easy-to-clean flooring system. May be used over Amerlock® as a durable, weather-resistant topcoat for extra heavy duty service; over zinc-rich epoxy coatings as a direct topcoat; over intact, old paint as a maintenance product.

A full color range is available in the Ameron Rapid Response color system to provide timely delivery.

Typical Uses

- OEM heavy equipment
- Structural steel
 - Bridges Stadiums
- Tanks
- Piping
- Industrial plants
 - Power Wastewater treatment
 - Pulp and paper Chemical and petrochemical
 - Food and beverages
- Transportation
 - Rail car exterior and hopper lining
 - Vehicle equipment - buses, trucks, lifts
- Marine
 - Decks Topside and superstructures on ships
 - Boottops Barges and offshore platforms
- Concrete walls and floors

Physical Data

Finish	Gloss	
Color	See Ameron color chart	
<i>Yellow, red and orange colors will fade faster than other colors due to the replacement of lead-based pigments with lead-free pigments in these colors.</i>		
Components	2	
Curing mechanism	Solvent release and chemical reaction	
Volume solids (ASTM D2697 modified)	73% ± 3%	
Dry film thickness per coat	5 mils (125 microns)	
Coats	1	
Theoretical coverage	ft ² /gal	m ² /L
1 mil (25 microns)	1171	29
5 mils (125 microns)	234	5.7
VOC (EPA Method 24)	lb/gal	g/L
mixed	0.7	84
Temperature resistance (dry)	°F	°C
continuous	200	93
intermittent	250	121
Flash point (SETA)	°F	°C
cure	122	50
resin	40	4
mixed	40	4
Amercoat 65	78	25
Amercoat 12	2	-17

Typical Properties

Physical

Impact resistance (ASTM D2794) @ 5 mils		
direct	140 in · lbs	15.8 N · m
reverse	50 in · lbs	5.6 N · m

Chemical Resistance Guide

Environment	Splash and Spillage	Fumes and Weather
Acidic	E	E
Alkaline	E	E
Salt solutions		
Acidic	E	E
Neutral	E	E
Alkaline	E	E
Seawater	E	E
Fresh water	E	E
Solvents	G	E
Petroleum products	E	E
F-Fair G-Good E-Excellent NR-Not Recommended		

This table is only a guide to show typical resistance of Amershield VOC. Contact your Ameron representative for your particular corrosion protection needs.

Typical Systems

Substrate	Primer	Finish Coat
Steel	none, 2, 400*, 68HS, 4119	Amershield VOC
Galvanizing	none, 2, 400*, 68HS, 4119	Amershield VOC
Aluminum	none, 2, 400*	Amershield VOC
Concrete	2, 400*	Amershield VOC
Masonry	none, 2, 400*	Amershield VOC

*Other Ameron epoxy primers are also acceptable.

Refer to specific primer's product data sheets and application instructions for detailed application and surface preparation information.

Apply test patch to intact coating to confirm compatibility and adhesion.

When Amerlock 400 is used as a primer for Amershield VOC the maximum topcoat time is one month; Amerlock 2 – 7 days, 400 with 861 Accelerator – 14 days. Clean and roughen surface if topcoat time is exceeded.

On Amercoat 68HS and Amercoat 4119 use a mist coat/full coat application procedure to prevent application bubbling.

Environmental Conditions

Temperature air or surface	°F	°C
Amershield VOC	40 to 120	4 to 49

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

Application Data

Applied over Prepared or primed steel, aluminum, galvanizing, masonry and primed concrete

Surface preparation
 steel SSPC-SP 6 or 10
 aluminum Alodine®, Alumiprep® or light abrasive blast
 galvanizing Galvaprep® or light abrasive blast
 concrete See specific primer
 masonry ASTM D4261
 previously coated surface SSPC-SP1, 3 or 7

Appearance will vary depending on substrate and application method.

Mixing ratio (by volume) 1 part cure to 4 parts resin

Pot life (hours)	°F/°C			
	90/32	70/21	50/10	32/0
Amershield VOC	1½	2½	5	-

Environmental Conditions

Temperature-Air or surface	°F	°C
Amershield VOC	40 to 120	4 to 49

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

Drying time (ASTM D1640) (hours)	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2½	4	-
through	5	10	72	-

Recoat time (hours)	°F/°C				
	90/32	80/26	70/21	50/10	32/0
minimum	4	5½	8	48	-
maximum	12	24	168	168	-

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.

Roughen surface or use Amerase™ if maximum recoat time is exceeded.

Thinner Amercoat 65

Equipment cleaner Thinner or Amercoat 12

Adhere to all application instructions, precautions, conditions and limitations to obtain the maximum performance. For conditions outside the requirements or limitations described, contact your Ameron representative.

Surface Preparation

Coating performance is, in general, proportional to the degree of surface preparation. All surfaces must be clean, dry and free of oil, grease, dirt, salt deposits or other contamination.

Steel – Mill scale and rust must be removed. Abrasive blast hot-rolled steel to SSPC-SP6 and rusted and pitted steel to SSPC-SP10. Clean cold-rolled steel to SSPC-SP1 using vapor degreasing or solvent emulsion to remove all oil, grease and contamination. Solvent wipe is not satisfactory. Contact Ameron for compatible phosphate surface treatments.

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

Galvanizing – Remove oil or soap film with neutral detergent or emulsion cleaner; treat with Galvaprep® Amchem Products or blast lightly with fine abrasive.

Amercoat 68HS or 4119 – Wash off water soluble contaminants; remove oil, grease, etc., with a neutral detergent or emulsion cleaner. Solvent wipe is not satisfactory.

Concrete – Clean concrete and masonry surfaces, abrasive blast (ASTM D4259) or acid etch (ASTM D4260). Fill concrete voids with Nu-Klad® 114A or 965. Fill masonry block with Amerlock® 400 with Amercoat 884 additive.

Coated surface – Clean by low pressure water cleaning (1000 psi or greater) water blast, abrasive blast (SSPC-SP7), solvent emulsion cleaning (SSPC-SP1) or power tool cleaning (SSPC-SP3). Surface must be clean, dry and free of oil, grease, dirt or other contamination. Apply test patch to confirm compatibility and adhesion.

Application Equipment

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

Airless and electrostatic spray – Standard equipment Graco, DeVilbiss, Nordson-Bede, Speeflo or others having a 28:1 or higher pump ratio and a fluid tip with a 0.015- to 0.021-inch (0.38- to 0.53-mm) orifice.

Conventional, air-assisted airless and electrostatic spray – Devilbiss, Binks or Graco production spray equipment with moisture and oil trap in the main air supply line.

Brush – Natural bristle. Maintain a wet edge.

Roller – Solvent resistant. Level any air bubbles with a bristle brush.

When brush or roller applied, multiple coats may be needed to achieve dry film thickness.

Application Procedures

1. Flush equipment with thinner or Amercoat 12.
2. Stir resin thoroughly, add cure and mix until uniform. Do not mix more material than will be used within pot life time. Mixing ratio is 4 parts resin to 1 part cure by volume.

Pot life (hours)	°F/°C			
	90/32	70/21	50/10	32/0
Amershield VOC	1½	2½	5	-

3. If thinning is necessary, add up to 1 pint Amercoat 65 per gallon of Amershield VOC.
4. To provide the smoothest appearance to the Amershield VOC coating, Amercoat® 851, flow control additive may be used if desired. See Amercoat 851 Product Data Sheet for more information.
5. When applying by spray, adjust pressures for equipment configuration and environmental conditions to ensure proper atomization.
6. Apply a wet coat in even, parallel passes; overlap each pass 50 percent.

Drying time (ASTM D1640) (hours)	°F/°C			
	90/32	70/21	50/10	32/0
touch	1	2½	4	-
through	5	10	72	-

Recoat time (hours)	°F/°C				
	90/32	80/26	70/21	50/10	32/0
minimum	4	5½	8	48	-
maximum	12	24	168	168	-

Roughen surface or use Amerase™ if maximum recoat time is exceeded.

Note: When applying directly over organic zinc at full thickness, bubbling may occur. A mist coat/full coat technique may be required to prevent application bubbling.

7. For colors, application of 8-mil wet film thickness (thinned) will normally provide 5-mil dry film thickness. Clear coat at 5-mils WFT will normally provide 3-mil DFT.
8. Clean all equipment with thinner or Amercoat 12 immediately after use.

Note: Moisture sensitive – Keep cure container tightly closed. Repeated moisture exposure will cause gellation and gassing; handle bulged containers with caution, lids may eject forcibly.

Repair

Spot blast or power tool clean bare substrate to the requirements shown under surface preparation. Feather edges of intact coating. Remove dust, dirt and contamination before recoating.

Shipping Data

Packaging units	1 gal	5 gal
cure	0.20 gal in 1-qt can	1 gal in 1-gal can
resin	0.80 gal in 1-gal can	4 gal in 5-gal can
Shipping weight (approx)	lb	kg
1-gal unit		
cure	2.2	1.0
resin	11.6	5.3
5-gal unit		
cure	10.4	4.7
resin	58.0	26.4
Shelf life when stored indoors at 40 to 100°F (4 to 38°C)		
resin	1 year from shipment date	
cure	1 year from manufacturer date	

Numerical values are subject to normal manufacturing tolerances, colors and testing variances. Appearance will vary depending on substrate and application method. Allow for application losses and surface irregularities. See application instructions for complete information and safety precautions.

This mixed product is nonphotochemically 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 both components. Safety precautions must be strictly followed during storage, handling and use.

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.**

Due to Ameron's policy of continuous product improvement, the information contained in this Product Data/Application Instructions sheet is subject to change without notice. It is the Buyer's responsibility to check that this issue is current prior to using the product. For the most up-to-date Product Data/Application Instructions always refer to the Ameron International Performance Coatings & Finishes website at www.ameroncoatings.com.

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 invoiced 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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