



Amercoat 450E

Aliphatic polyurethane topcoat

(450 Series)

formerly Steelguard 3390 [3392]

Product Data/ Application Instructions

- High gloss high UV exposure resistant topcoat available as gloss and semi-gloss finish (Amercoat 450E SG)
- Outstanding weather resistance with excellent colour and gloss retention
- Resistant to a broad range of corrosive and marine atmospheres
- Resists soil pick up and easily cleaned
- Hard, tough, flexible, and abrasion resistant
- Cures through a wide temperature range
- Recoatable finish
- BBA HAPAS and Network Rail approved

Typical Uses

A highly durable topcoat for protective coating systems used on general structural steel operating in a wide range of environmental conditions such as bridges, marine structures, petroleum processing and storage facilities, chemical and power plants and other heavy industrial facilities.

Typical systems using Amercoat 450E

| First coat | Intermediate | Finish coat |
|--|-------------------------------|---------------|
| Dimetcote | Amercoat 385 or Amercoat 383H | Amercoat 450E |
| Amercoat 68 Series | Amercoat 385 or Amercoat 383H | Amercoat 450E |
| Amercoat 385PA Amercoat 235 Amercoat 240 Amercoat 370 Amercoat 385 | | Amercoat 450E |
| Amerlock series | | Amercoat 450E |

Approvals and Certificates

Amercoat 450E is approved and registered to BBA HAPAS Roads and Bridges Certificate Reference 05/H116 (Highways Agency specification item 168 (gloss) and item 169 (semi gloss)). It is also approved and registered to UK Network Rail RT98 specification item 7.3.1.



Physical Data

| | | |
|---------------------------------|---|------------------------|
| Finish | gloss and semi gloss | |
| Colour..... | RAL & BS-colours* | |
| Components | 2 | |
| Mixing ratio (volume) | 4 parts resin to 1 part cure | |
| Density | | |
| Amercoat 450E gloss..... | 1.37 | (white, mixed product) |
| Amercoat 450E semi gloss.. | 1.44 | (white, mixed product) |
| Curing mechanism | solvent evaporation and reaction between components | |
| Volume solids | 60% ± -3% (ISO 3233)** | |
| VOC..... | 26% by weight | |
| | 350 g/l | 2.9 lb/gal |
| Dry film thickness | | |
| gloss | 40-75 microns | (1.6-3 mils) |
| semi gloss..... | 50-125 microns | (2-5 mils) |
| Number of coats | 1*** | |
| Theoretical coverage..... | m ² /L | ft ² /gal |
| at 40 microns /1.6 mil dft..... | 15.0 | 557 |
| at 70 microns /2.8 mil dft..... | 8.6 | 318 |
| Temperature resistance | 120°C | 250°F |
| Flashpoints | °C | °F |
| Amercoat 450E Cure | 25 | 77 |
| Amercoat 450E Resin..... | 30 | 86 |
| Mixed | 30 | 86 |
| Amercoat 920 | 24 | 75 |
| Amercoat 12 | 24 | 75 |
| Thinners | Amercoat 920 | |
| Cleaner..... | Amercoat 12 | |

* On tanks and other large structures previously coated with contrasting primer or intermediate coats, uniform appearance may require two coats of Amercoat 450E. Use only a light colour primer or intermediate coat when only one finish coat of Amercoat 450E in a light colour is specified.

** Volume solids is measured in accordance with ISO 3233. Slight variations ±3% may occur due to colour and testing variances.

*** Brush or roller application may require additional coats to achieve required dry film thickness.

Amercoat 450E

Chemical Resistance Guide

When applied over suitable primer or intermediate coat:

| Environment | Splash and Spillage | Fumes and Weather |
|----------------|---------------------|-------------------|
| Acidic | Very good | Excellent |
| Alkaline | Very good | Excellent |
| Solvents | Good | Excellent |
| Salt solutions | | |
| Acidic | Excellent | Excellent |
| Neutral | Excellent | Excellent |
| Alkaline | Excellent | Excellent |
| Water | Excellent | Excellent |

This table is only a guide. For specific recommendations, contact your Ameron representative for your particular corrosion protection needs. Amercoat 450E is not recommended for immersion service.

Surface Preparation

Amercoat 450E must be applied over a suitable primer or intermediate coating. The surface of the previous coatings must be dry and free of grease, oil, dust, salts and other foreign matter immediately before application.

Application Equipment

The following equipment is listed as a guide and suitable equipment from other manufacturers may be used. Adjustments of pressure and change of tip size may be needed to obtain the proper spray characteristics.

AIRLESS SPRAY - Standard airless spray equipment, such as Graco, DeVilbiss, Nordson-Bede, Spee-Flo or others capable of producing a minimum pressure at the tip of 155 kg/cm² (2200 psi) and having a fluid tip with a 0.38 to 0.48 mm (0.015 to 0.019 inch) orifice.

CONVENTIONAL SPRAY - Industrial equipment such as DeVilbiss MBC or JGA gun with 78 or 765 air cap and "E" fluid tip and heavy mastic spring or Binks No. 18 or 62 with a 66 x 63 PB nozzle setup. Separate air and fluid pressure regulators, mechanical pot agitator and a moisture and oil trap in the main air supply line are recommended.

MIXER - Use power mixer powered by an air motor or an explosion proof electric motor.

Application Data

Substrates Steel, concrete, aluminium, galvanizing or aged coatings all of which have been suitably prepared and primed.

Surface preparation..... Refer to the typical systems table for specific primer or intermediate coatings recommended.

Application method..... Airless or conventional spray, brush or roller.

Environmental conditions
 Air temperature 0-50 °C 32-122 °F
 Surface temperature..... 0-60 °C 32-140 °F

Surface temperature must be at least 3°C / 5°F above the dew point to prevent moisture condensation on the surface. Condensation occurring on the applied coating during the initial drying phase must also be avoided.

Potlife (hours, °C/°F) 32/90 21/70 10/50 5/40
 2 4 8 12

Drying times (°C/°F)
 Dry to touch (hours)..... 1 ½ 3 4,5 6
 Dry through (hours) 4 8 12 16

Recoat times (°C/°F) 32/90 21/70 10/50 5/40
 Minimum (hours)..... 4 8 16 24
 Maximum not limited with itself

Thinner Amercoat 920

Equipment cleaner Amercoat 12

Amercoat 450E

Application Procedure

Amercoat 450E is packaged in the proper mixing proportions of resin and cure which must be mixed together before use.

1. Flush equipment with recommended cleaner before use.
2. Stir both resin and cure to a uniform consistency with a power mixer.
3. Add cure to resin, and continue stirring for 5 minutes.
NOTE: since the potlife is limited and shortened by high temperatures, do not mix more material than will be used within the potlife at the specified temperature.
4. For spray application, thin only as needed for workability with no more than 10 vol % of recommended thinner. For application at temperatures below 10°C (50°F), more thinner may be required to ensure proper atomizing.
NOTE: For brushing and rolling, normally no thinning is required.
5. Apply a wet coat in even, parallel passes. Overlap each pass 50% to avoid bare areas, pinholes or holidays.
6. Double coat all welds, rough spots, sharp edges and corners, rivets, bolts, etc.
7. Application at 83 µm (3.3 mil) wet film thickness will normally provide 50 µm (2 mils) dry film.
8. Check thickness of dry coating with a non-destructive dry film thickness gauge, such as Mikrotest or Elcometer. If less than specified thickness, apply additional material as needed.
9. Small damaged or bare areas and random pinholes or holidays can be touched up by brush. Repair larger areas by spray.
10. In confined areas ventilate with clean air during application and drying until all solvents are removed. Temperature and humidity of ventilating air must be such that moisture condensation will not form on surface.
11. Clean all equipment with recommended cleaner immediately after use or at least at the end of each working day or shift. When left in spray equipment, Amercoat 450E will cure and cause clogging.

Repair

For repair, or application of additional thickness, Amercoat 450E may be over coated with itself unlimited. Ensure surface is clean prior to application.

Shipping data

| | | |
|-----------------|---|------|
| Packaging | | |
| Resin | 16 L in 20 L can | |
| Cure | 4 L in 5 L can | |
| Shipping weight | | |
| 20 litre units | | |
| Resin | 25 | 55 |
| Cure | 5 | 11 |
| 5 litre units | | |
| Resin | 6 | 13.2 |
| Cure | 1.3 | 2.8 |
| Shelf life..... | 1 year from shipment date when stored indoors in unopened, original containers at 5 to 40°C (41 to 104°F) | |

Amercoat 450E

Caution

This product is flammable. Keep away from heat and open flame. Keep container closed. Use with adequate ventilation. Avoid prolonged and repeated contact with skin. If used in confined areas, observe the following precautions to prevent hazards of fire or explosion or damage to the health:

1. circulate adequate fresh air continuously during application and drying;
2. use fresh air masks and explosion proof equipment;
3. prohibit all flames, sparks, welding and smoking.

Do not empty into drains. Take precautionary measures against static discharges. For specific information on hazardous ingredients, required ventilation, possible consequences of contact and safety measures see Safety Data Sheet.

Safety

Since improper use and handling can be hazardous to health and cause of fire or explosion, safety precautions included with application instructions must be observed during all storage, handling, use and drying periods.

To avoid any confusion that may arise through translation into other languages, the English version of the Product Data/Application Instructions will be the governing literature and must be referred to in case of deviations with product literature in other languages.

Warranty

Ameron warrants its products to be free from defects in material and workmanship. Ameron's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at Ameron's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-confirming 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 non-conformance 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 particular purpose, shall apply. In no event shall Ameron be liable for consequential or incidental damages.

Any recommendations or suggestion relating to the use of the products made by Ameron, whether in its technical literature, or response to specific enquiry, or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyer's having requisite skill and know-how in the industry, and therefore it is Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. Variation in environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

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.

Condition of Sale

All our transactions are subject to our Terms and Conditions of Sale.