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***		
EC SED 1999/13/EC	303 g/kg (413 g/l)	
UK PG6/23(92) Appendix 3	350 g/l (2.9 lbs/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.
An aluminium finish is only supplied in a non-staining semi-gloss tint.
****** Volume solids is measured in accordance with ISO 3233. Slight variations ±3% may occur due to colour and testing variances.
*** VOC figures are quoted according to both the EC directive 1999/13/EC which are theoretically calculated figures and the UK PG6/23(92) Appendix 3 which are practically determined figures.
**** Brush or roller application may require additional coats to achieve required dry film thickness.

Revision date:28-11-2007

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 PPG 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/cm^2 (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)	32/90	21/70	10/50	5/40
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	kg	lb
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)	

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 Product Data/Application Instruction and Material Safety Data Sheet must be observed during all storage, handling, use and drying periods.

Warranty
PPG warrants its products to be free from defects in material and workmanship. PPG's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at PPG's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to PPG 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 PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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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.

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