

# Amercoat 90S

## High Performance Modified Epoxy (90 Series)

### Product Data/ Application Instructions

- High solids tank lining
- Excellent chemical resistance
- Suitable for cycling and long term continuous immersion service.
- Withstands continuous immersion in water up to 60°C (140°F)
- Recommended under thermal insulation on carbon steel or stainless steel up to 200°C (392°F)

#### Typical Uses

##### Tanklining:

Lining for ship tanks, railroad cars, road tankers and fixed storage tanks. Amercoat 90S is suitable for exposure to a wide range of solvents, fuels, petroleum products, non-acidic aqueous products and caustics. Amercoat 90 S provides excellent resistance to the cycling exposure of chemicals such as ships tanks carrying a variety of chemical cargoes. Amercoat 90S is also resistant to long term exposure to large variety of specific chemicals, such as in storage tanks in the chemical industry and tank farms.

##### Under thermal insulation:

Amercoat 90S (Previously known as Amercoat 253 HT for this service) is suitable to protect carbon and stainless steel under thermal insulation up to 200°C (392°F). For temperatures up to 200°C(392°F) Amercoat 90S is to be applied in one or two coats, not exceeding 200 microns dft. For temperatures up to 150°C(302°F) two coats of 150 microns each may be applied as outlined in NACE RP0198-98 Item 21084 system 5.

##### Nuclear industry:

Amercoat 90S is resistant to cumulative radiation of  $7,8 \times 10^9$  Rads when tested according to ANSI N5,12-1974, American Standard-Protective Coatings for the Nuclear Industry.

#### Resistance Guide

See Amercoat 90S Chemical Resistance List.

#### Physical Data

Finish .....	flat
Colour .....	White, Pearl Grey
Components .....	2
Mixing ratio (by volume)	
resin .....	2 parts
cure .....	1 part
Curing mechanism .....	solvent release and chemical reaction between components
Volume solids .....	58% (ISO 3233)*
VOC**	
EC SED 1999/13/EC .....	286 g/kg (388 g/l)
UK PG6/23(92) Appendix 3 .....	348 g/l (2.9 lbs/gal)
Dry film thickness .....	100-150 µm (4-6 mils) per coat minimum***
Number of coats .....	2
Calculated coverage .....	3.9 m <sup>2</sup> /l at 150 µm 159 ft <sup>2</sup> /gal at 6 mils
Allow for application losses, surface irregularities, etc.	
Specific gravity .....	1.38 kg/l (mixed product)
Flash points (Closed Cup).....	°C                      °F
resin .....	23                      73
cure .....	23                      73
Amercoat 65 .....	24                      75
Amercoat 12 .....	24                      75
Thinner .....	Amercoat 65
Cleaner .....	Amercoat 12

\* 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.

\*\*\* For exposure up to a temp. of 150°C, 2 coats of 150 µm dft are recommended. For temperature exceeding 150°C and up to 200°C, 2 coats of 100 µm. For use under thermal insulation do not exceed 200 microns dry film thickness

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## Application Data Summary

Amercoat 90S is a high performance epoxy for corrosive chemical and weather environments. Refer to Amercoat 90S product data sheet for properties and use. To obtain the maximum performance for which Amercoat 90S is formulated, strict adherence to all application instructions, precautions, conditions and limitations is necessary. If conditions exist that are not within the requirements or limitations described, consult your PPG representative.

Like all high performance coatings, this product must be applied as recommended to obtain the maximum protection for which this coating is formulated.

## Surface Preparation

**STEEL - Immersion:** blast to Sa 3, ISO 8501-1 or SSPC SP-5. NOTE: blast to achieve a minimum 40 µm a maximum 75 µm profile, as determined with *Testex* Tape or similar device. Remove abrasive residues and dust from surface.

**IMPORTANT -** Apply Amercoat 90S as soon as possible after surface preparation to prevent any contamination.

Do not leave blasted steel uncoated overnight. In case of contamination, remove contaminants. Spot blast steel if needed. If required Amercoat 71SF may be used as a holding primer.

**CONCRETE -** Clean concrete and masonry surfaces from laitance and foreign matter. Abrasive blast (ASTM D4259) or acid etch (ASTM D4260). Fill small holes or voids with Nu-Klad 114A before applying Amercoat 90S. Contact your PPG representative for specific recommendations if concrete surfaces have been coated before or for specific coating repair procedures for disintegrated concrete.

NOTE: do not use form release agents, concrete curing compounds or hardeners. If used already, contact your PPG representative.

## 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.

## 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 having a 28:1 or higher pump ratio and a fluid tip with a 0.43 to 0.58 mm (0.017 to 0.023 inch) orifice.

## Application Data

Substrate ..... abrasive blasted steel, suitably prepared concrete

Application methods ..... airless or conventional spray

Potlife ..... 4 hours at 20°C/68°F  
2 hours at 30°C/86°F

Potlife is dependent on temperature and quantities mixed.

Environmental Conditions(during application and drying)

Air temperature: .....	10 to 43°C	50-109°F
Surface temperature: .....	10 to 50°C	50-122°F
Material temperature:.....	10 to 40°C	50-104°F

Surface temperature must be at least 3°C/5°F above dew point to prevent moisture condensation on the surface.

Never apply coatings under adverse environmental conditions.

Ensure good ventilation when applied in confined areas to assist evaporation and elimination of solvents.

Drying Times (°C/°F) .....	10/50	20/68	30/86
dry through (hours) .....	32	16	10
before full service (days).....	14	7	4

NOTE: drying times are dependent on air and steel temperature, applied film thickness, ventilation and other environmental conditions. Times are proportionally shorter at higher temperature and longer at lower temperatures. Prior to recoating ensure the surface is clean.

Recoating Times (°C/°F) .....	10/50	20/68	30/86
minimum (hours) .....	48	24	16
maximum (days) .....	15	12	10

Induction time at 20°C/68°F ... not applicable

Thinner ..... Amercoat 65

Cleaner ..... Amercoat 12

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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 and a mechanical pot agitator are recommended. A moisture and oil trap in the main air supply line is essential.

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

## Application Procedure

Amercoat 90S is packaged in the proper mixing proportions of resin and cure.

resin                                13.3 l (3,5 gal) in 20 l can  
cure                                 6.7 l (1,8 gal) in 10 l can

1. Flush equipment with recommended thinner before use.
2. Stir each of the components prior to mixing to an even 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 period.
4. For conventional spray, thin only as needed for workability with no more than 10% of Amercoat 65. Thinning is normally not needed for airless spray.
5. Stir during application to maintain uniformity of material. Apply a wet coat by 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 260 µm (10,4 mils) wet film thickness will normally provide 150 µm (6 mils) dry film. Total dry thickness must not exceed 450 µm (18 mils) and not be less than 250 µm (10 mils) in 2 coats.
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. When a pinhole free coating is required, check continuity of dry but uncured coating with a non destructive holiday detector such as Tinker-Razor, model M1. Apply additional coats to areas requiring touch up.
11. 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.
12. 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 90S will cure and cause clogging.

## Shipping Data

Packaging 20 l  
resin ..... 13.3 l (3,5 gal) in a 20 l can  
cure ..... 6.7 l (1,8 gal) in a 10 l can

Shipping weight  
resin ..... approx. 21kg  
cure ..... approx. 10 kg

Packaging 5 l  
resin ..... 3.3 l (0.9 gal) in a 5 l can  
cure ..... 1.7 l (0.4 gal) in a 2.5 l can

Shipping weight  
resin ..... approx. 5.4kg  
cure ..... approx. 2.3 kg

Shelf life ..... 1 year from shipment date  
when stored indoors in  
unopened, original containers  
at 5 to 40°C (41-104°F).

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## 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 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, exposure 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.

**PPG 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 PPG be liable for consequential or incidental damages.**

Any recommendations or suggestion relating to the use of the products made by PPG, 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

PPG's liability on any claim of any kind, including claims based upon PPG'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 PPG be liable for consequential or incidental damages.

Due to PPG'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 PPG Protective & Marine Coatings website at [www.ppgpmc.com](http://www.ppgpmc.com)

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.

