



Amercoat 2209

Solvent Free Epoxy Coating System

Product Data/ Application Instructions

- Epoxy resin based laminate system for oil/crude oil or water storage tanks
- Repairs and protects tank walls and bottoms against corrosion
- Economical maintenance system
- Provides great strength and excellent chemical resistance

Typical Uses

Amercoat 2209 epoxy laminate system is specifically designed for the lining and/or repair of tank walls and tank bottoms of oil or water storage tanks which are corroded and pitted.

Outstanding Characteristics

Amercoat 2209 epoxy laminate system will provide corrosion, and chemical resistance to bottoms of water or oil storage tanks, which have suffered from internal corrosion. Amercoat 2209 is specifically resistant to the corrosive environment of crude oil/water mixtures. Amercoat 2209 is suitable for use with potable water, according to the United Kingdom Water Fittings Scheme, 'tests of effect on water quality', as tested by the Albury Laboratories in the United Kingdom.

Theoretical Consumption per m²

- Amercoat 71(TC) primer: 0.14 litre
- Amercoat 2209 filler (surfacers/filler): 380 grams
- Amercoat 2209 for surfacer/filler: 0.16 litre
- Amercoat 2209 lining: 2.5 litre
- When using the 450 g/m² glassmat a 10% overlap is necessary resulting in a consumption of 1.1 m² glassmat per m²
- When using the 300 g/m² glassmat a 50% overlap is necessary resulting in a consumption of 2m² per m².

NOTE: Actual consumption per m² depends on tank design and steel condition. For instance heavily pitted areas, steel plate overlaps striker pads and chime areas influence the practical consumption rate.

Physical Data

Finish	gloss	
Colour	amber (clear)	
Components	2	
Mixing ratio (by weight)		
resin	2 parts	
cure	1 part	
Curing mechanism	chemical reaction between components	
Volume solids	100%	
VOC	0	
Number of coats	see application instructions	
Product	overlap	theoretical coverage
.....		
450 grams mat	10%	1.1 m ² /m ²
300 grams mat	50%	2.0 m ² /m ²
Tissue 30 gram	10%	1.1 m ² /m ²
Product	dft	theoretical coverage
.....		
Amercoat 71(TC) primer	35 µm	13.7 m ² /l
.....	50 µm	9.6 m ² /l
Amercoat 2209	2.5 mm	2.5 l/m ²
When ordering allow a loss factor of 10% for glassmat and Amercoat 2209		
Specific gravity	1.14 kg/l (mixed product)	
Temperature resistance	immersed: 95°C/203°F non-immersed: 120°C/248°F	
Flash points (Closed Cup)		
resin	126°C/259°F	
cure	99°C/210°F	
Amercoat 12	24°C/75°F	

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Surface Preparation

All steel should be cleaned from oil residues and contamination. Blast in accordance with Swedish Standard Sa 2½ SIS 05 5900 - 1967, ISO 8501-1 or Steel Structures Painting Council SP-10.

The blasted steel must be primed with Amercoat 71(TC) primer when a holding primer is needed before application of the Amercoat 2209 laminate system.

Application Data Summary

Like all high performance coatings, Amercoat 2209 must be applied as recommended to obtain the maximum protection for which this coating system is formulated. Amercoat 2209 epoxy laminate system is specifically designed for the lining and/or repair of tank walls and tank bottoms of oil or water storage tanks which are corroded and/or pitted. To obtain the maximum performance for which Amercoat 2209 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 Ameron representative.

Application Procedure

1. Bottom repair
 - 1.1 Any weak areas and holes in the bottom of the tank have to be covered with a new steel plate, that is welded to the bottom. This plate must be blasted as prescribed under Surface Preparation and primed.
 - 1.2 Pitted areas have to be filled with the surfacer as described under 2.2.

In floating roof tanks, where legs are attached to the underside of the roof, the legs have to be jacked-up one by one to allow the repair of the strikerpads.
When jacked-up the bottom part must be cleaned and preferably blasted to Sa 2½, then a new strikerpad, slightly smaller than the original, must be applied to the original one. This plate should be pretreated by blasting to Sa 2½ and primed with Amercoat 71(TC) primer at a dft between 30 and 50 µm. If required this plate can be coated on one side with the Amercoat 2209 laminate and cured before it is glued with Amercoat 2209 to the original strikerpad. When this is inconvenient or not required the primed plate can also be applied directly with Amercoat 2209 to the original strikerpad.
2. Epoxy resin based filler and surfacer
 - 2.1 Filler and surfacer to be used for steel plate overlaps, seams, welds, pitted areas and chime areas (between wall and floor plates) should exist of following mixtures
Amercoat 2209 epoxy and Amercoat 2209 filler.
 - 2.2 Surfacer
To obtain a good workable surfacer for horizontal areas, following mixture is recommended:
1 part by weight of ready mixed Amercoat 2209 epoxy
2 parts by weight of Amercoat 2209 filler.
For a good workable surface for vertical areas approx.
3 parts by weight of Amercoat 2209 filler are recommended.
 - 2.3 Filler
To obtain a good workable tough filler for the chime area, following mixture is recommended: 1 part by weight of ready mixed Amercoat 2209 epoxy to 5 to 6 parts by weight of Amercoat 2209 filler.

Application Data

Substrate steel or steel primed with Amercoat 71(TC)

Application methods spray or roller

Potlife (at 21°C/70°F) 1½ hours for 10 litre unit

Pot life is dependent on temperature and quantities mixed.

Curing times (at 21°C/70°F)

to recoat up to 2 days

initial set 24 hours

full chemical resistance 9 days

Induction time (at 21°C/70°F) not applicable

Environmental Conditions

(during application)

Air temperature: 10 to 50°C (50 to 122°F)

Surface temperature: 10 to 35°C (50 to 95°F)

To prevent moisture condensation during application and curing, surface temperature must be at least 3°C/5°F above dew point. Never apply coatings under adverse environmental conditions. Ensure good ventilation when applied in confined areas.

Mixed material must be between 20 and 35°C (68 and 95°F). If components have been stored below 20°C/68°F, warm to 20 to 25°C (68 to 77°F). If components have been stored above 35°C/95°F cool to 30 to 35°C (86 to 95°F).

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- 2.4 Depending on material and steel temperature, a small difference in above mixing ratios may be practical.
NOTE: Make sure the Amercoat 2209 epoxy exists of the right mixture of cure and resin, and is mixed properly before any filler is added. The pot life of these mixtures will be approx. equal to the pot life of pure Amercoat 2209 epoxy.
3. Application of the epoxy resin based laminate
Prior to the application of the laminate system, the surface shall be completely free from dust, oil, grease, moisture and any foreign matter. The epoxy resin based laminate system for the tank bottoms consists of the Amercoat 2209 epoxy coating as manufactured by Ameron B.V. with one or two layers of the chopped strand glassmat plus one layer of the surfacing tissue.
- 3.1 To reach a final coating thickness of 2½ mm a total of 2½ litre of Amercoat 2209 has to be used per square meter. The volume of the glassmat incorporated will compensate losses due to application.
- 3.2 Apply 0.75 l/m² Amercoat 2209 by roller or spray to the substrate (500-750 µm). Apply one layer of chopped strandmat reinforcement onto the wet Amercoat 2209.
- 3.3 Apply the adjacent layer of glassmat overlapping the first layer using a 50% overlap with a 300 g/m² glassmat, following the 'double up' system.
- 3.4 Apply a second coat of 0.75 l/m² of Amercoat 2209, preferably by spray and compact by rolling with split-washer rollers to displace the air in the mat outwards.
- 3.5 When the entire tank is finished, Amercoat 2209 should be allowed to cure to initial set.
- 3.6 Apply approximately 0.50 l/m² of Amercoat 2209 preferably by spray or brush or roller and apply the surfacing tissue. Compact by rolling with split-washer rollers to displace the air in the mat outwards.
- 3.7 Seal the glassmat reinforced epoxy system by the application of 0.50 l/m² of Amercoat 2209 by spray.
- 3.8 The pot life of Amercoat 2209 is 1½ hours at 25°C/77°F.
4. Measurements and curing
- 4.1 After the final coat of Amercoat 2209 has been applied and cured for 16-24 hours at 25°C/77°F, inspect the coating for porosity with a holiday detector namely high voltage spark testing equipment with a voltage of max. 7.5 KV. If voltages exceeding 10-12 KV are used, holes may be created in the laminate system.
- 4.2 Check dry film thickness of the laminate with a non-destructive dry film thickness meter (e.g. Mikrotest S5).
- 4.3 If porous areas are found or when thickness is too low, roughen the surface of the cured laminate and remove all dust and foreign matter. Apply a further laminate consisting of one or two layers of the chopped strandmat and surfacing tissue as outlined under par 3.
- 4.4 The subsequent layers of the fibre glassmats with the Amercoat 2209 epoxy resin systems can be applied wet on wet. The maximum time between the subsequent coats of Amercoat 2209 depend on the temperature, as shown in the following list:
- | | |
|------------|-----------------|
| 15°C/59°F: | maximum 4 days |
| 20°C/68°F: | maximum 3 days |
| 25°C/77°F: | maximum 2 days |
| 30°C/86°F: | maximum 1½ days |
| 35°C/95°F: | maximum 1 day |
- The above mentioned temperature are surface temperatures.
- 4.5 Curing
The curing time to achieve full chemical resistance depends on the temperature, as is shown in the following list:
- | | |
|------------|---------|
| 15°C/59°F: | 13 days |
| 20°C/68°F: | 9 days |
| 25°C/77°F: | 7 days |
| 30°C/86°F: | 6 days |
| 35°C/95°F: | 5 days |
- The above mentioned temperatures are surface temperatures.

Shipping Data

Packaging	
resin	6.55 l in 10 l can
cure	3.45 l in 5 l can
Shipping weight	
resin	approx. 9.0 kg
cure	approx. 4.5 kg
Shelf life	1 year from shipment date when stored indoors in unopened, original containers at 5 to 40°C (41 to 104°F).

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Caution

This product is combustible. 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; use fresh air masks.

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

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-conforming 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.

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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 Performance Coatings & Finishes website at www.amerondirect.co.uk

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.