



Steelguard FM 580

Thin Film Water Borne Intumescent Coating

Product Data/ Application Instructions

- Thin film water borne intumescent for on-site application
- Environmentally friendly with low VOC and low odour
- Chlorine free
- Tested to international fire test standards
- Up to 1 hour fire protection of structural steel
- For dry internal C1 conditions (ISO12944)
- Up to 700 µm dry film thickness per coat
- Rapid job completion

Typical Uses

Intumescent fire protection for internal structural steel in ISO 12944 C1 conditions such as offices, hospitals, schools, shops. Being waterborne and with very low odour it provides a friendly and safer alternative to solvent based coatings for application on site in enclosed environments.

Approvals

Steelguard FM 580 has been tested to British Standard 476 Part 21 and UK assessed by Warrington Fire. Appraised by the UK ASFP technical committee and approved for entry in the Yellow Book. Steelguard FM 580 has also been assessed in accordance with the Dutch standard NEN 6072:2001.

Mixing

Stir Steelguard FM 580 thoroughly before use until the product is uniform throughout. A power mixer should be used.

Physical Data

Appearance when dry	matt			
Colour	white			
Components	1			
Volume solids*	70 ± 3%			
VOC**				
EC SED 1999/13/EC	20g/kg (28 g/l)			
UK PG6/23(92) Appendix 3 ...	50g/l			
Curing mechanism	water evaporation and polymer coalescence			
Loading requirements.....	In order to establish the dry film thickness required to give the specified fire resistance reference should be made to the products A/V m ⁻¹ (Hp/A) or limiting temperature tables. Contact your Ameron representative for full details.			
Dry film thickness (µm)	250	400	500	700
Wet film thickness (µm)	360	570	715	1000
Theoretical coverage (m ² /l)	2.80	1.75	1.40	1.00
(Wet film thicknesses quoted are theoretical for one airless spray coat)				
Specific gravity	1.40 kg/l			
Flashpoint.....	°C	°F		
(closed cup)	61	142		

* Volume Solids is measured in accordance with ASTM D2697 modified. Slight variations of up to ±3% may occur due to testing variances.

** VOC figures are quoted according to the EC directive 1999/13/EC which are theoretically calculated figures and the UK PG6/23 (92) Appendix 3 which are practically determined figures.

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Surface Preparation

Steelguard FM 580 must always be applied to a previously blasted and primed steel substrate. The surface should be dry and free of debris, dust, cement, salts, grease and other contamination immediately before coating. The primer used should be applied in accordance with the specific product data sheet instructions and must be approved by Ameron to ensure compatibility with the Steelguard FM 580. Do not apply Steelguard FM580 directly on to metallic zinc coatings. The total dry film thickness of primer coats should not exceed 150 µm.

Application Methods

Spray application will provide the smoothest finish. Brush and roller application will result in a textured finish.
AIRLESS SPRAY - Use a pump capable of producing a minimum pressure at the tip of 2800 psi (200 kg/cm²). Tip size 17-21 thou' (0.43-0.53mm). A 30 mesh/500 µm internal filter is recommended. Dry film thickness of initial coat should not exceed 700 µm. Take care not to over apply the coating particularly in internal angles and corners. Subsequent coats may be applied after 8 hours at 20°C/68°F, to a maximum dry film thickness of 700 µm per coat.
BRUSH/ROLLER- Apply evenly using a clean, well-loaded brush or roller at up to 300 µm dry film thickness per coat. As a guide allow at least 4 hours drying at 20°C/68°F between coats.

Drying Characteristics

Drying times will vary considerably depending on ambient conditions, air movement, method of application, $A/V \text{ m}^{-1}$ (Hp/A) of section being coated and applied film thickness. As a guide, at 20°C/68°F and 50% RH, a 400 micron dry film thickness coating will be touch dry in approximately 2 hours and hard dry after approximately 4 hours. For further details on the drying times of Steelguard FM 580 refer to the drying tables or contact your Ameron representative.

Overcoating

Although there is no protective requirement for a topcoat in dry internal C1 conditions, for decorative purposes Amercoat 220 series products are the recommended water borne topcoats. Steelguard FM 580 should be left a minimum of 4 hours at 20°C 68°F) prior to overcoating with Amercoat 220. For details of other approved topcoats such as Steelguard 2458 please contact your Ameron representative. It is important that the specified intumescent thickness has been achieved before any topcoating.

Application Data

Substrate primed abrasive blasted steel

Application methods airless spray, brush, roller

Environmental Conditions

Steelguard FM 580 must only be applied in dry, unexposed conditions that will be free from high humidity and condensation.

Relative humidity: up to 80%
Surface temperature: 5 - 40°C 41- 104°F

Surface temperature must be at least 3°C/5°F above dew point to prevent moisture condensation on the surface. Optimum drying conditions are at temperatures above 10°C/50°F with good air movement. In poorly ventilated areas it is recommended adequate ventilation is introduced to prevent retardation of drying. Steelguard FM580 should not be applied if there is a risk of condensation and the temperature falling during the initial drying stages.

Potlife not applicable

Thinner not normally necessary

Cleaner fresh clean water

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Application procedure

1. Clean the equipment with suitable solvent, then thoroughly wash with clean water before use.
2. Stir the product to an even consistency using a power mixer. Thinning is not required.
3. For airless spray, apply a wet even coat in parallel passes. Overlap each pass by 50% to avoid bare areas, pinholes or holidays.
4. Give special attention to welds, rough spots, sharp edges and corners, rivets, bolts, etc.
5. Application at 570 µm wet film thickness will normally provide 400 µm dry film.
6. 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.
7. Small damaged or bare areas and random pinholes or holidays can be touched up by brush. Repair larger areas either by spray, brush or roller using Steelguard FM 580.
8. In confined areas ventilate with clean air during application and drying. The humidity should be maintained below 80% and the temperature such that moisture condensation will not form on the surface both during application and the initial stages of drying.
9. Clean all equipment with fresh, clean water immediately after use or at least at the end of each working day or shift.

Before using the product, read the label on the can and consult the material safety data sheet.

Shipping Data

Pack size	20 litres
Shipping weight	approx. 28 kg
Shelf life	1 year from shipment date when stored indoors in unopened, original containers at 5 to 30°C (41 to 86°F). Must be protected from frost.

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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.

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.

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Condition of Sale

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