

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 National and International standards for cellulosic fire exposure (ISO 834) and subsequently assessed and certified in accordance with various National requirements. Please contact your PPG Protective and Marine Coatings representative for latest information relating to local market requirements and approvals. For given projects PPG Protective and Marine Coatings can provide customers with loading data and material consumption calculations stipulated by required fire protection, steel section designation and local requirements. Standard loading tables can be made available where applicable.

Mixing

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



APPROVED PRODUCT
CF 458

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 PPG 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 PPG 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 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 PPG 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 PPG 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

Water can be used when needed (up to 5% by volume), However wet/ dry film measurement result will differ & lower max film build as result will have to be considered

Cleaner fresh clean water

Steelguard FM 580

Application procedure

Clean the equipment with suitable solvent, then thoroughly wash with clean water before use.

Stir the product to an even consistency using a power mixer.

Thinning is not required.

For airless spray, apply a wet even coat in parallel passes. Overlap each pass by 50% to avoid bare areas, pinholes or holidays.

Give special attention to welds, rough spots, sharp edges and corners, rivets, bolts, etc.

Application at 570 µm wet film thickness will normally provide 400 µm dry film.

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.

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.

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.

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 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.ppgmc.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.

