

PPG STEELGUARD® 851

DESCRIPTION

One component thin-film solvent-borne intumescent coating for fire protection of structural steelwork

PRINCIPAL CHARACTERISTICS

- Provides up to 120 minutes protection from cellulosic fires
- Fast-drying, providing short handling times
- Off-site or on-site application
- Up to 1000 µm (40.0 mils) DFT in a single coat
- Suitable for C1 to C4 internal and external environments (ISO 12944); for dry internal (C1) environments no topcoat is required
- Weather resistant up to 12 months without topcoat provided the coating has been applied in accordance with PPG STEELGUARD APPLICATION GUIDELINES and is not subject to running or pooling water, high humidity or immersion conditions
- Tested and assessed to EN 13381-8, BS 476-20/21 and AS 1530.4
- CE marked product, ETA 22/0574
- Assessed to EAD 350402-00-1106 for all durability classifications

COLOR AND GLOSS LEVEL

- White
- Matt

BASIC DATA AT 20°C (68°F)

Data for product	
Number of components	One
Mass density	1.35 kg/l (11.27 lb/US gal)
Volume solids	75 ± 3%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 255.0 g/kg UK PG 6/23(92) Appendix 3: max. 327.0 g/l (approx. 2.7 lb/US gal) EUR Directive: 2004/42/IIA(i)(500) 369 g/l
Recommended dry film thickness	200 - 1000 µm (8.0 - 40.0 mils) per coat
Theoretical spreading rate	1.07 m²/l for 700 µm (43 ft²/US gal for 28.0 mils)
Dry to touch	20 minutes
Overcoating Interval	Minimum: 4 hours Maximum: Unlimited
Shelf life	At least 18 months when stored cool and dry

Notes:

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- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- The required dry film thickness must be in accordance with the approval certification

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Approved primer must be sound, dry and free from any contamination

Substrate temperature and application conditions

- Substrate temperature during application and curing should be between 5°C (41°F) and 40°C (104°F)
- Substrate temperature during application and curing should be at least 3°C (37°F) above dew point
- Ambient temperature during application and curing should be between 5°C (41°F) and 40°C (104°F)
- Relative humidity during application and curing should not exceed 85%

INSTRUCTIONS FOR USE

- Stir thoroughly until homogeneous and free of lumps
- Adding too much thinner results in reduced sag resistance and slower cure

Airless spray

Recommended thinner

THINNER 21-06 (normally no thinner required)

Volume of thinner

0 – 5%

Nozzle angle

20° – 50°, depending on shape of steel parts

Nozzle orifice

Approx. 0.48 – 0.64 mm (0.019 – 0.025 in)

Nozzle pressure

20.0 MPa (approx. 200 bar; 2901 p.s.i.)

Notes:

- External fluid uptake pipe filter is recommended
- All filters, including surge bottle and gun filters to be removed

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Brush/roller

- For small areas only (touch up and repair)

Recommended thinner

No thinner should be added

Cleaning solvent

- THINNER 21-06 (97-727)

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
200 µm (8.0 mils)	3.75 m ² /l (150 ft ² /US gal)
400 µm (16.0 mils)	1.88 m ² /l (75 ft ² /US gal)
500 µm (20.0 mils)	1.50 m ² /l (60 ft ² /US gal)
700 µm (28.0 mils)	1.07 m ² /l (43 ft ² /US gal)
1000 µm (40.0 mils)	0.75 m ² /l (30 ft ² /US gal)

Note:

- Maximum DFT when brushing: 300 µm (12.0 mils)

Overcoating interval for DFT up to 700 µm (28.0 mils)						
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)
itself	Minimum	10 hours	8 hours	6 hours	4 hours	3 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Note:

- All overcoating times have been measured at an intumescent WFT of 1000 µm (approx. 700 µm DFT) under controlled temperature and relative humidity below 85%. Higher thicknesses will take longer to cure.

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Overcoating interval for DFT up to 700 µm (28.0 mils)						
Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)
STEELGUARD 2458	Minimum	2 hours	1.5 hours	1 hour	30 minutes	20 minutes
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
other approved topcoats	Minimum	3 days	60 hours	48 hours	24 hours	16 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Notes:

- The system should be dry to handle and coating thickness gauge should not leave an indentation on the surface prior to applying subsequent coats. Curing time(s)/overcoating interval(s) may be extended at higher applied DFT's and/or there is a change in environmental conditions.
- Prior to application of a topcoat, the applicator must ensure that the specified dry film thickness has been achieved

Curing time for DFT up to 700 µm (28.0 mils)	
Substrate temperature	Dry to touch
5°C (41°F)	1 hour
10°C (50°F)	45 minutes
15°C (59°F)	30 minutes
20°C (68°F)	20 minutes
30°C (86°F)	10 minutes

Note:

- All curing times have been measured at an intumescent WFT of 1000 µm (approx. 700 µm DFT) under controlled temperature and relative humidity below 85%. Higher thicknesses will take longer to cure.

SAFETY PRECAUTIONS

- See Safety Data Sheet and product label for complete safety and precaution requirements
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.



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REFERENCES

- Guide | PPG STEELGUARD | Application guidelines
- System sheet | PPG STEELGUARD | Approved primers
- System sheet | PPG STEELGUARD | Approved topcoats
- Information sheet | Explanation of product data sheets
- System sheet | PPG STEELGUARD | Systems and environments
- Information sheet | PPG Steelguard | FAQ's

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