

STEELGUARD™ 581

DESCRIPTION

One-component, thin-film, waterborne intumescent coating for fire protection of structural steel and concrete

PRINCIPAL CHARACTERISTICS

- Provides up to 90 minutes protection from cellulosic fires
- 60 minutes SCI assessment of beams with circular web openings
- Provides up to 150 minutes protection from cellulosic fires for concrete beams and columns
- Provides up to 360 minutes protection from cellulosic fires for concrete ceilings and walls
- On-site application
- Up to 700 µm (28.0 mils) DFT in a single coat
- Suitable for C1 and C2 internal environments (ISO 12944); for dry internal (C1) environments no topcoat is required
- Tested and assessed to BS 476-20/21 and prEN 13381-3:2012

COLOR AND GLOSS LEVEL

- White
- Matt

BASIC DATA AT 20°C (68°F)

Data for product	
Number of components	One
Mass density	1.43 kg/l (11.93 lb/US gal)
Volume solids	70 ± 3%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 20.0 g/kg max. 30.0 g/l (approx. 0.3 lb/US gal)
Recommended dry film thickness	200 - 700 µm (8.0 - 28.0 mils) per coat
Theoretical spreading rate	1.00 m ² /l for 700 µm (40 ft ² /US gal for 28.0 mils)
Dry to touch	2 hours
Overcoating Interval	Minimum: 16 hours Maximum: Unlimited
Shelf life	At least 6 months when stored cool and dry

Notes:

- 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



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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Approved primer must be sound, dry and free from any contamination
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Substrate temperature and application conditions

- Substrate temperature during application and curing should be between 10°C (50°F) and 40°C (104°F)
 - Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
 - Substrate moisture content of concrete should not exceed 4% (ASTM F2659-10)
 - Ambient temperature during application and curing should be between 10°C (50°F) and 40°C (104°F)
 - Relative humidity during application and curing should not exceed 80%
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INSTRUCTIONS FOR USE

- Stir thoroughly until homogeneous and free of lumps
 - Adding too much water results in reduced sag resistance and slower cure
 - Must be protected from freezing at all times during storage and/or transport
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Airless spray

Recommended thinner

Tap water (normally no thinner required)

Volume of thinner

0 - 5%

Nozzle angle

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

Nozzle orifice

Approx. 0.43 – 0.53 mm (0.017 – 0.021 in)

Nozzle pressure

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

Notes:

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

- For small areas only (touch up and repair)
- A roller is required for application of the primer / sealer coat on concrete

Recommended thinner

No thinner should be added

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Cleaning solvent

Tap water

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
200 µm (8.0 mils)	3.50 m ² /l (140 ft ² /US gal)
400 µm (16.0 mils)	1.75 m ² /l (70 ft ² /US gal)
500 µm (20.0 mils)	1.40 m ² /l (56 ft ² /US gal)
700 µm (28.0 mils)	1.00 m ² /l (40 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	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)
itself	Minimum	24 hours	20 hours	16 hours	12 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited
approved topcoats	Minimum	24 hours	20 hours	18 hours	14 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited

Note: The water content of STEELGUARD 581 shall not exceed 4% prior to overcoating (ASTM F2659-10)

Curing time for DFT up to 700 µm (28.0 mils)	
Substrate temperature	Dry to touch
10°C (50°F)	4 hours
15°C (59°F)	3 hours
20°C (68°F)	2 hours
30°C (86°F)	1 hour

Note: Drying times may vary considerably depending on ambient conditions, A/V m⁻¹ (Hp/A) of section and applied film thickness

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- Although this is a waterborne paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes

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REFERENCES

• STEELGUARD™ APPLICATION GUIDELINES	INFORMATION SHEET	1222
• STEELGUARD™ QUALIFIED PRIMERS	INFORMATION SHEET	1224
• STEELGUARD™ QUALIFIED TOPCOATS	INFORMATION SHEET	1226
• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650
• STEELGUARD™ 581 APPLICATION GUIDELINES FOR CONCRETE SUBSTRATES	INFORMATION SHEET	4095

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