SIGMAGUARD™ 750

DESCRIPTION

Two-component, moisture-curing zinc-rich (ethyl) silicate coating

PRINCIPAL CHARACTERISTICS

- Tank coating with excellent solvent and chemical resistance
- To be used as tank coating or as a system primer in various paint systems based on unsaponifiable binders
- Can withstand substrate temperatures from –90°C (–130°F) up to 400°C (750°F), under normal atmospheric exposure conditions
- High zinc content resulting in excellent corrosion protection
- Good impact and abrasion resistance
- Certificate for ASTM A-490 class 'B' for slip coefficient
- Recognized corrosion control coating (Lloyd's register)
- Must not be used for immersion in alkaline (more than pH 9) or acidic (less than pH 5.5) liquids
- Complies with SSPC-Paint 20 level 2 and ISO 12944.5

COLOR AND GLOSS LEVEL

- Gray
- Flat

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	2.7 kg/l (22.5 lb/US gal)
Volume solids	65 ± 2%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 167.0 g/kg UK PG 6/23(92) Appendix 3: max. 452.0 g/l (approx. 3.8 lb/US gal) China GB 30981-2020 (tested) 414.0 g/l (approx. 3.5 lb/gal)
Recommended dry film thickness	75 - 100 µm (3.0 - 4.0 mils) depending on system
Theoretical spreading rate	8.7 m^2/l for 75 µm (348 ft^2/US gal for 3.0 mils)
Dry to touch	30 minutes
Overcoating Interval	Minimum: 12 hours Maximum: Unlimited
Full cure after	12 hours
Shelf life	Binder: at least 9 months when stored cool and dry Pigment: at least 24 months when stored pigment moisture free

Notes:
- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- A heavy pitted steel substrate is not acceptable

Substrate temperature and application conditions

- Substrate temperature during application should be between -5°C (23°F) and 40°C (104°F)
- Substrate temperature during application should be at least 3°C (5°F) above dew point
- Relative humidity during curing should be above 50%

SYSTEM SPECIFICATION

System for chemical resistance according to the latest issue of the chemical resistance list.

- SIGMAGUARD 750: 1x 75-100 µm (3.0-4.0 mils)

INSTRUCTIONS FOR USE

Mixing ratio by volume: binder to zinc powder 74:26

- Many of PPG's zinc silicates are supplied as two-pack materials consisting of a container with pigmented binder and a drum containing a bag of zinc powder.
- To ensure proper mixing of both components, the instructions given below must be followed
- To avoid lumps in the paint do not add the binder to the zinc powder
- [1] Take the bag with zinc powder out of the drum
- [2] Shake the binder in the jerrycan a few times to reach a certain degree of homogenization
- [3] Pour about 2/3 of the binder into the empty drum
- [4] With the jerrycan now reduced in weight and containing more free space, shake it vigorously to obtain a homogeneous mix with no deposits left on the bottom, and add this to the drum
- [5] Add the zinc powder gradually to the pigmented binder in the drum and, at the same time, continuously stir the mixture by using a mechanical mixer (keep the speed low)
- [6] Stir the zinc dust powder thoroughly through the binder (high speed) and keep stirring until a homogeneous mixture is obtained
- [7] Strain mixture through a 30 – 60 mesh screen
- [8] Agitate continuously during application (low speed). The use of a dedicated pump with a constant agitation for a zinc silicate coating is recommended

Note: At application temperature above 30°C (86°F) addition of max 10% by volume of THINNER 90-53 may be necessary

Induction time

None

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Pot life
12 hours at 20°C (68°F)

Note: See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner
THINNER 90-53

Volume of thinner
0 - 10%, depending on required thickness and application conditions

Nozzle orifice
2.0 mm (approx. 0.079 in)

Nozzle pressure
0.3 MPa (approx. 3 Bar; 44 p.s.i.)

Note: A dedicated pump for a zinc silicate coating with constant agitation must be used

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Airless spray

Recommended thinner
THINNER 90-53

Volume of thinner
0 - 10%, depending on required thickness and application conditions

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

Nozzle pressure
9.0 - 12.0 MPa (approx. 90 - 120 bar; 1306 - 1741 p.s.i.)

Note: A dedicated pump for a zinc silicate coating with constant agitation must be used

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Brush/roller

- Only for touch-up and spot repair

Recommended thinner
THINNER 90-53

Volume of thinner
5 – 15%

Note: Apply a visible wet coat with a max. dft of 25 µm (1.0 mils)|same for subsequent coats in order to obtain the required dft

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Cleaning solvent
THINNER 90-53

Upgrading
- When for some reason the DFT is below specification and an extra coat of SIGMAGUARD 750 has to be applied. SIGMAGUARD 750 should be thinned down with 25 to 50% THINNER 90-53 in order to obtain a visible wet coat that remains wet for some time
- This is only valid for spray application

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
75 µm (3.0 mils)	8.7 m^2/l (348 ft^2/US gal)
100 µm (4.0 mils)	6.5 m^2/l (261 ft^2/US gal)

Notes:
- Maximum DFT when brushing: 35 µm (1.4 mils)
- Above 150 µm (6.0 mils) mudcracking can occur

Overcoating interval for DFT up to 75 µm (3.0 mils)							
Overcoating with...	**Interval**	**-5°C (23°F)**	**0°C (32°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
itself	Minimum	24 hours	24 hours	18 hours	12 hours	6 hours	4 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Notes:
- Relative humidity below 50% requires a much longer minimum overcoating interval
- If part of a coating system and in order to avoid possible popping effects (pinholes) SIGMAGUARD 750 should be sealed with approved coatings
- SIGMAGUARD 750 is a moisture curing zinc silicate, this means that it cures after sufficient exposure to moisture from the atmosphere during and after application; it is recommended that relative humidity and temperature are measured during the curing time
- Before entering service or overcoating, a sufficient degree of cure should be obtained
- When curing conditions are unfavorable or when reduced overcoat times are desired, curing can be accelerated 4 hours after application by:
- [Option 1] Wetting or soaking with water, keeping the surface wet for the next 2 hours, followed by drying
- [Option 2] Wetting or soaking with a 0.5% ammonia solution, followed by drying
- Before overcoating with topcoats, SIGMAGUARD 750 should always be visibly dry and checked on sufficient curing
- For measuring of the curing, the MEK rub test according to ASTM 4752 is a suitable method: after 50 double rubs with a cloth soaked in MEK (or alternatively THINNER 90-53) no dissolving of the coating should be observed

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Curing time for DFT up to 75 µm (3.0 mils)		
Substrate temperature	**Service- water immersion**	**Full cure**
0°C (32°F)	24 hours	4 days
10°C (50°F)	18 hours	4 days
20°C (68°F)	12 hours	48 hours
30°C (86°F)	6 hours	48 hours
40°C (104°F)	4 hours	48 hours

Notes:
- SIGMAGUARD 750 is a moisture curing zinc silicate, this means that it cures after sufficient exposure to moisture from the atmosphere during and after application
- It is recommended that relative humidity and temperature are measured during the curing time
- Relative humidity during curing recommended to be above 50%
- Adequate ventilation must be maintained during application and curing

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
0°C (32°F)	24 hours
10°C (50°F)	16 hours
20°C (68°F)	12 hours
30°C (86°F)	6 hours

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 and 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.

REFERENCES

- EXPLANATION TO PRODUCT DATA SHEETS INFORMATION SHEET 1411

SIGMAGUARD™ 750

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