AMERCOAT® D9

DESCRIPTION

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

PRINCIPAL CHARACTERISTICS

- Anticorrosive primer for structural steel
- Complies with the compositional requirements of SSPC-Paint 20, Level 1 and AS/NZS 3750.15 Type 4
- Suitable as a system primer in various paint systems based on unsaponifiable binders
- Can withstand substrate temperatures from –90°C (–130°F) up to 500°C (930°F), under normal atmospheric exposure conditions
- When suitably topcoated provides excellent corrosion protection for steel substrates up to 540°C (1000°F)
- Must not be exposed to alkaline (more than pH 9) or acidic (less than pH 5.5) liquids
- Specified for structural joints according to ASTM A325 or A490 Bolts RCSC specification, Class B
- May be applied as two coat system (total DFT 150-200 µm) providing very long term exterior durability
- May be applied at 100-150 µm DFT where a single coat system is required with increased service life

COLOR AND GLOSS LEVEL

- Gray
- Flat

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	2.3 kg/l (19.2 lb/US gal)
Volume solids	58 ± 2%
VOC (Supplied)	Directive 2010/75/EU, SED: max. 221.0 g/kg UK PG 6/23(92) Appendix 3: max. 480.0 g/l (approx. 4.0 lb/US gal)
Recommended dry film thickness	75 - 100 µm (3.0 - 4.0 mils) depending on system
Theoretical spreading rate	7.7 m^2/l for 75 µm (310 ft^2/US gal for 3.0 mils)
Dry to touch	15 minutes
Overcoating Interval	Minimum: 48 hours Maximum: Unlimited
Full cure after	48 hours
Shelf life	Binder: at least 12 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

Immersion exposure

- Steel; blast cleaned to ISO-Sa2½, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss, welds, rusty and damaged areas blast cleaned to ISO-Sa2½

Atmospheric exposure conditions

- Steel; blast cleaned to ISO-Sa2½ or minimum SSPC SP-6, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
- Steel with zinc silicate shop primer; pretreated according to ISO-Sa1 (SSPC SP-7)

Substrate temperature and application conditions

- Substrate temperature during application and curing down to -18°C (0°F) is acceptable; provided the substrate is free from ice and dry
- Substrate temperature during application up to 55°C (131°F) is acceptable
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
- Relative humidity during curing should be above 50%

INSTRUCTIONS FOR USE

Mixing ratio by weight: binder to zinc powder 100:177

- 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] Use a mechanical mixer to stir the binder in order to reach a certain degree of homogenization
- [3] 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)
- [4] Stir the zinc dust powder thoroughly through the binder (high speed) and keep stirring until a homogeneous mixture is obtained
- [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] 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

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Pot life

8 hours

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
- Roller application is not recommended

Recommended thinner

THINNER 90-53, THINNER 21-06 (AMERCOAT 65), THINNER 21-25 (AMERCOAT 101) FOR > 60°F (15°C)

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, THINNER 90-58 (AMERCOAT 12) or THINNER 21-06 (AMERCOAT 65)

Upgrading

- This is only valid for spray application
- If the DFT is below specification and an extra coat of AMERCOAT D9 has to be applied, it should be thinned down with 25 – 50% Thinner 90-53, in order to obtain a visible wet coat that remains wet for some time

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ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
75 µm (3.0 mils)	7.7 m^2/l (310 ft^2/US gal)
100 µm (4.0 mils)	5.8 m^2/l (233 ft^2/US gal)
125 µm (5.0 mils)	4.6 m^2/l (186 ft^2/US gal)

Notes:

- Maximum DFT when brushing: 35 µm (1.4 mils)
- Above 150 µm (6.0 mils) mudcracking can occur
- Highly pigmented zinc silicate primers produce dry films with void spaces in between the particles

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Overcoating interval for DFT up to 100 µm (4.0 mils)					
Overcoating with...	**Interval**	**0°C (32°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**
recommended topcoats	Minimum	48 hours	36 hours	24 hours	18 hours
	Maximum	Unlimited	Unlimited	Unlimited	Unlimited

Notes:

- The above data are for 70% humidity condition
- For recoating with itself to take required DFT, recommend to apply within 10 days. No minimum recoating interval limitation for itself.
- To confirm cure to topcoat, conduct a MEK rub test per ASTM D4752. A rating of 4 or higher is sufficient for topcoating
- Curing/recoating time will be shortened by the increase of humidity, please contact regional technical service team for details
- 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
- A mist coat / full coating application technique is required when topcoating to prevent application bubbling. Ensure dry spray is removed from the surface
- AMERCOAT D9 is a moisture curing zinc silicate, this means that it only cures after sufficient take up of water from the atmosphere during and after application; it is recommended that relative humidity and temperature are measured during the curing time
- Maximum interval is only unlimited when the surface is free from any contamination

Curing time for DFT up to 75 µm (3.0 mils)		
Substrate temperature	**Full cure**	**Dry to handle**
0°C (32°F)	4 days	2 hours
10°C (50°F)	3 days	1 hour
20°C (68°F)	48 hours	30 minutes
30°C (86°F)	36 hours	20 minutes

Notes:

- Relative humidity during curing recommended to be above 50%
- It is recommended that relative humidity and temperature are measured during the curing time
- Adequate ventilation must be maintained during application and curing
- AMERCOAT D9 is a moisture curing zinc silicate, this means that it only cures after sufficient take up of water from the atmosphere during and after application

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
20°C (68°F)	8 hours

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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.

REFERENCES

- Information sheet | Explanation of product data sheets

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