

PPG DIMETCOTE® 9

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
- Specified for structural joints according to ASTM A325 or A490 Bolts RCSC specification, Class B
- 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
- Tank coating with excellent solvent and chemical resistance

COLOR AND GLOSS LEVEL

- Gray, greenish gray
- Flat

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	2.4 kg/l (20.0 lb/US gal)
Volume solids	63 ± 3%
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	50 - 100 µm (2.0 - 4.0 mils) depending on system
Theoretical spreading rate	8.4 m²/l for 75 µm (337 ft²/US gal for 3.0 mils)
Dry to touch	15 minutes
Overcoating Interval	Minimum: 24 hours Maximum: Unlimited
Full cure after	46 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

Immersion exposure

- Steel; blast cleaned to ISO Sa2½ or minimum SSPC SP10, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
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Atmospheric exposure conditions

- Steel; blast cleaned to ISO Sa2½ or minimum SSPC SP6, blasting profile 40 – 70 µm (1.6 – 2.8 mils)
 - Steel with zinc silicate shop primer; pretreated according to ISO Sa1 (SSPC SP7)
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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%
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SYSTEM SPECIFICATION

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

- PPG DIMETCOTE 9 : 75 to 100 µm (3.0 to 4.0 mils) DFT
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INSTRUCTIONS FOR USE

Mixing ratio by volume: binder to zinc powder 77:23 (3.35:1)

- 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
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Pot life

8 hours

Note:

- See ADDITIONAL DATA – Pot life
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Air spray

Recommended thinner

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

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

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

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 DIMETCOTE 9 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

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	Theoretical spreading rate
75 µm (3.0 mils)	8.4 m²/l (337 ft²/US gal)
100 µm (4.0 mils)	6.3 m²/l (253 ft²/US gal)
125 µm (5.0 mils)	5.0 m²/l (202 ft²/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:

- For recoating with itself to increase DFT, it is recommended to apply within 2 days before full cure. However it can be over coated with itself for an unlimited period as long as the surface is dry, clean and free from any contamination including zinc salts prior to application of the subsequent coat. The subsequent coat should be thinned by 25 – 50% with THINNER 90-53
- To confirm cure to topcoat, conduct a MEK rub test per ASTM D4752. A rating of 4 or higher is sufficient for topcoating
- 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
- Curing/recoating time will be shortened by the increase of humidity, please contact regional technical service team for details
- A mist coat / full coating application technique is required when topcoating to prevent application bubbling. Ensure dry spray is removed from the surface
- DIMETCOTE 9 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
- When curing conditions are unfavorable or when reduced overcoat times are desired, curing can be accelerated 4 hours after application by: [1] Wetting or soaking with water, keeping the surface wet for the next 2 hours, followed by drying; [2] Wetting or soaking with a 0.5% ammonia solution, followed by drying
- 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)	46 hours	30 minutes
30°C (86°F)	36 hours	20 minutes

Notes:

- 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
- DIMETCOTE 9 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

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

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. 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 of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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