PPG HI-TEMP™ 1027 HD

DESCRIPTION

Two-component, ambient cured multi-polymeric heat resistant coating system

PRINCIPAL CHARACTERISTICS

- Designed to prevent corrosion under insulation (CUI) of carbon steel and stainless steel
- Enhanced wear resistant coating for ease of transport
- New-build, shop, and field application
- Cyclic temperature resistance from -196°C (-320°F) to 540°C (1000°F)
- Resistant to thermal shock/cycling and intermittent immersion and boiling water
- Resistant to dry operating windows up to 650°C (1200°F)
- Good UV resistance
- Designed for single coat application, may be used in two coats if so specified or on complex structures
- Cures at temperatures down to -10°C (14°F)

COLOR AND GLOSS LEVEL

- Grey, Dark Grey
- Flat

Note:

- Minor color differences may occur due to batch variation and from exposed service above 316°C (600°F)

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.8 kg/l (14.7 lb/US gal)
Volume solids	65 ± 2%
VOC (Supplied)	max. 408.0 g/l (approx. 3.4 lb/US gal)
Recommended dry film thickness	125 - 300 µm (5.0 - 12.0 mils) per coat
Theoretical spreading rate	2.6 m^2/l for 250 µm (104 ft^2/US gal for 10.0 mils)
Dry to touch	2 hours
Dry to handle	24 hours
Shelf life	Base: at least 12 months when stored cool and dry Hardener: at least 12 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Spreading rate and film thickness
- See ADDITIONAL DATA – Curing time

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions of carbon steel for insulated and non-insulated service

- Must be free of oil, dirt, grease and all other contaminants, especially salts
- Round off all rough welds and sharp edges. Remove weld spatter.
- Recommended is dry abrasive blast cleaning to SSPC SP6, “Commercial Blast” (ISO Sa2) with a 25 to 50 µm (1.0 to 2.0 mils) profile
- Steel; hydrojetted to VIS WJ2/3L

Substrate conditions of stainless steel for insulated and non-insulated service

- Must be free of oil, dirt, grease and all other contaminants, especially salts
- Round off all rough welds and sharp edges. Remove weld spatter.
- Lightly abrasive blast in accordance with SSPC SP16 requirements or otherwise abrade the surface to ensure a uniform and dense surface profile of at least 25 µm (1.0 mil)
- Small surfaces may be cleaned with a chlorinated-free solvent. Large surfaces may be cleaned utilizing a high- or low- pressure wash or steam cleaning with an alkaline detergent (such as Prep 88), followed by a freshwater rinse. Water used should be potable grade or better and should be checked to assure minimal salt content. Do not use any chemical additives in the rinse water

Notes:

- Do not use chlorinated solvents on stainless steel surfaces

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Substrate temperature and application conditions

- Substrate temperature during application should be between 10°C (50°F) and 175°C (350°F)
- Substrate temperature during application should be at least 3°C (5°F) above dew point
- Relative humidity during curing should be above 20% and below 90%
- Application to hot substrate: should be above 50°C (122°F) and below 175°C (350°F)

Initial high temperature exposure when topcoated

- When topcoated, to prevent any blistering from solvent entrapment, the substrate temperature should be increased slowly at a rate of 1-2°C per minute to 177-204°C (350-400°F) and held for 2 hours. Alternatively, the initial temperature ramp up can be done in increments of 25°C (77°F) while holding at that given temperature for 20-30 min each

Notes:

- Before topcoating, a one off heating up to 177°C (350°F) for 2h of HI-TEMP 1027 HD can also be used as an alternative to the above ramping procedure

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SYSTEM SPECIFICATION

Insulated and non-insulated service: applied direct to ambient or hot carbon steel

- PPG HI-TEMP 1027 HD: minimum 250-300 µm (10.0-12.0 mils) DFT continuous application using multiple spray passes. Refer to application guide for additional details.
- Designed for single coat application. Specified thickness can also be built up in 2 coats.
- For high corrosive condition (C4-C5) and when sea transportation is necessary:
- PPG DIMETCOTE 9: 50 to 75 µm (2.0 to 3.0 mils) DFT
- PPG HI-TEMP 1027 HD: 250 to 300 microns (10-12 mils) DFT

Notes:

- Hot application is not applicable to PPG DIMETCOTE 9
- Systems with PPG DIMETCOTE 9 as a primer can withstand service temperatures up to 540°C (1000°F) provided that DFT for PPG DIMETCOTE 9 is between 50 to 65 µm (2.0 to 2.5 mils)
- For non-insulated service, PPG HI-TEMP 1027 HD is compatible with PPG HI-TEMP topcoats to their respective maximum service temperatures: PPG HI-TEMP 500 or PPG HI-TEMP 1000. Consult a PPG representative for application to hot substrates.

Insulated and non-insulated service: applied direct to ambient or hot stainless steel

- PPG HI-TEMP 1027 HD: minimum 250-300 µm (10.0-12.0 mils) DFT continuous application using multiple spray passes. Refer to application guide for additional details.
- Designed for single coat application. Specified thickness can also be built up in 2 coats.

Notes:

- For non-insulated service, PPG HI-TEMP 1027 HD is compatible with PPG HI-TEMP topcoats to their respective maximum service temperatures: PPG HI-TEMP 500 or PPG HI-TEMP 1000. Consult a PPG representative for application to hot substrates.

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 2:1

- Pre-mix each component with a pneumatic air mixer at moderate speeds to homogenize the container. Add hardener to base and agitate with a power mixer for 1–2 minutes until completely dispersed.

Air spray

- No thinner is recommended

Nozzle orifice

1.8 – 2.2 mm (approx. 0.070 – 0.087 in)

Nozzle pressure

0.3 - 0.5 MPa (approx. 3 - 5 bar; 44 - 73 p.s.i.)

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Airless spray

- No thinner is recommended

Nozzle orifice

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

Nozzle pressure

13.8 MPa (approx. 138 bar; 2002 p.s.i.)

Brush/roller

- Spray application is recommended but when spray painting is not possible, brush or roller may be used. The coating should be applied with a suitable brush or short nap roller, brush and roll only in one direction.

Recommended thinner

Application below 50°C (122°F): THINNER 21-06 (AMERCOAT 65)

Application from 50°C (122°F) to 149°C (300°F): Thinner 21-25 (Amercoat 101)

Volume of thinner

Up to 5% THINNER can be added if desired

Cleaning solvent

- THINNER 21-06 (AMERCOAT 65)

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
250 µm (10.0 mils)	2.6 m^2/l (104 ft^2/US gal)
300 µm (12.0 mils)	2.2 m^2/l (87 ft^2/US gal)

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Curing time for DFT up to 250 µm (10.0 mils)		
Substrate temperature	**Dry to recoat/topcoat**	**Dry to handle/ship**
5°C (41°F)	24 - 36 hours	3 days
10°C (50°F)	16 - 24 hours	48 hours
20°C (68°F)	6 - 8 hours	24 hours
30°C (86°F)	5 - 7 hours	15 hours
40°C (104°F)	4 - 6 hours	12 hours

Notes:

- Minimum re-coating/top-coat time mentioned refers to compatible topcoats. PPG HI-TEMP 1027 HD can be re-coated with itself without considering a minimum over coating time.
- Drying times are dependent on air and steel temperature, applied film thickness, ventilation and other environmental conditions
- Relative humidity of <50% will reduce curing speed and increase time to full cure
- For insulation, the drying times have to be doubled from dry to handle time to ensure sufficient solvent evaporation

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
20°C (68°F)	6 - 8 hours

SAFETY PRECAUTIONS

- The product is for use only by professional applicators in accordance with information in this product data sheet and the applicable material safety data sheet (MSDS). Refer to the appropriate MSDS before using this material. All use and application of this product should be performed in compliance with all relative federal, state and local, health, safety and environmental regulations or in compliance with all pertinent local, regional and national regulations as well as good safety practices for painting, and in conformance with recommendations in SSPC PA 1, “Shop, Field and Maintenance Painting of Steel.”

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

- Guide | PPG HI-TEMP 1027 HD | Application guidelines
- Information sheet | Explanation of product data sheets

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WARRANTY

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