NOVAGUARD™ 650

DESCRIPTION

Two-component, solvent-free amine cured epoxy coating

PRINCIPAL CHARACTERISTICS

- Tank coating for crude oil and aliphatic petroleum products
- Rapid cure and return-to-service
- Good resistance to various chemicals
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Excellent anticorrosive properties and water resistance
- Good abrasion resistance
- A clear (semi-transparent) version is available for systems reinforced with chopped glass fibers or glass fiber mats
- Meets the requirements of EI 1541 2.2 (coating systems for aviation fuel storage tanks and pipes)

COLOR AND GLOSS LEVEL

- Gray, offwhite, clear (semi-transparent)
- Gloss

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.4 kg/l (11.7 lb/US gal)
Volume solids	100%
VOC (Supplied)	UK PG 6/23(92) Appendix 3: max. 20.0 g/l (approx. 0.2 lb/US gal)
Recommended dry film thickness	300 - 600 µm (12.0 - 24.0 mils) depending on system
Theoretical spreading rate	3.3 m^2/l for 300 µm (134 ft^2/US gal for 12.0 mils) 1.7 m^2/l for 600 µm (67 ft^2/US gal for 24.0 mils)
Dry to touch	8 hours
Overcoating Interval	Minimum: 12 hours Maximum: 6 months
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:

- 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 50 – 100 µm (2.0 – 4.0 mils)

Substrate temperature and application conditions

- Substrate temperature during application and curing should be above 5°C (41°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 4:1

- The temperature of the mixed base and hardener should preferably be above 20°C (68°F)
- No thinner should be added

Pot life

45 minutes at 20°C (68°F)

Note:

- See ADDITIONAL DATA – Pot life

Airless spray

- Use heavy-duty, single-feed, airless spray equipment, preferably 60:1 pump ratio and suitable high-pressure hoses/ in-line heating or insulated hoses may be necessary to avoid cooling down of paint in hoses at low air temperature

Recommended thinner

No thinner should be added

Nozzle orifice

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

Nozzle pressure

21.0 MPa (approx. 210 bar; 3046 p.s.i.)

Brush/roller

- Brush: for stripe coating and spot repair only

Recommended thinner

No thinner should be added

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Cleaning solvent

- THINNER 90-53 or THINNER 90-83
- All application equipment must be cleaned immediately after use
- Paint inside the spraying equipment must be removed before the pot life has been expired

ADDITIONAL DATA

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
300 µm (12.0 mils)	3.3 m^2/l (131 ft^2/US gal)
600 µm (24.0 mils)	1.7 m^2/l (67 ft^2/US gal)

Overcoating interval for DFT up to 600 µm (24.0 mils)						
Overcoating with...	**Interval**	**5°C (41°F)**	**10°C (50°F)**	**20°C (68°F)**	**30°C (86°F)**	**40°C (104°F)**
itself	Minimum	36 hours	20 hours	12 hours	5 hours	2 hours
	Maximum	6 months	6 months	6 months	4 months	2 months

Note:

- Surface must be dry and free from any contamination

Curing time for DFT up to 600 µm (24.0 mils)	
Substrate temperature	**Service- water immersion**
5°C (41°F)	3 days
10°C (50°F)	45 hours
20°C (68°F)	18 hours
30°C (86°F)	6 hours

Note:

- Time to Service- water immersion allows for tank test with fresh, brackish or sea water. Chemical solutions in water (acids, bases or fertilizer for instance) require full cure

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Curing time for DFT up to 600 µm (24.0 mils)	
Substrate temperature	**Dry to walk on**
5°C (41°F)	58 hours
10°C (50°F)	36 hours
20°C (68°F)	14 hours
30°C (86°F)	5 hours

Note:

- At the dry to walk on time care is still required to not exert local peak or static pressure. A slight recoverable imprint may be visible but this does not affect the coating performance. Dry to walk on time allows for coating inspection including holiday/spark testing.

Curing time for DFT up to 600 µm (24.0 mils)			
Substrate temperature	**Dry to handle**	**Minimum cure time for purely aliphatic petroleum product (see note)**	**Minimum cure time for all other chemicals**
5°C (41°F)	36 hours	4 days	15 days
10°C (50°F)	24 hours	60 hours	10 days
20°C (68°F)	12 hours	30 hours	5 days
30°C (86°F)	4 hours	10 hours	60 hours

Note:

- At the cure time for purely aliphatic petroleum products, crude oil, clean petroleum products / fuels and bio-diesel can be loaded. Gasoline/alcohol blends are not included in purely aliphatic petroleum products. Please contact your PPG representative for further details

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
20°C (68°F)	45 minutes
30°C (86°F)	20 minutes

Note:

- Due to exothermic reaction, temperature during and after mixing may increase

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SAFETY PRECAUTIONS

- Although this is a solvent-free paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes
- See Safety Data Sheet and product label for complete safety and precaution requirements

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 | NOVAGUARD 650 | Chemical resistance guide
- Guide | Tank maintenance | Our guide to the economical repair of corroded tank bottoms
- Information sheet | Explanation of product data sheets

WARRANTY

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