NOVAGUARD™ 890

DESCRIPTION

Two-component, solvent-free, amine-cured novolac phenolic epoxy coating

PRINCIPAL CHARACTERISTICS

- One-coat tank coating system
- Excellent resistance to crude oil up to 120°C (250°F)
- Suitable for storage of unleaded gasolines blended up to 100% ethanol (E5 up to E100)
- Suitable for storage of biodiesel (EN14214)
- Good chemical resistance against a wide range of chemicals and solvents
- Good visibility due to light color
- Easy to clean
- Can be applied by heavy-duty, single-feed, airless spray equipment (60:1)
- Reduced explosion risk and fire hazard
- Excellent pit filling capabilities
- Meets the requirements of EI 1541 2.2 (coating systems for aviation fuel storage tanks and pipes)

COLOR AND GLOSS LEVEL

- Cream and green
- 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)	Directive 2010/75/EU, SED: max. 94.0 g/kg max. 131.0 g/l (approx. 1.1 lb/US gal) EPA Method 24: 92.0 g/ltr (0.8 lb/USgal)
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)
Dry to touch	8 hours
Overcoating Interval	Minimum: 22 hours Maximum: 2 months
Full cure after	6 days
Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:

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

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

Substrate conditions

- Steel; blast cleaned to a minimum of SSPC-SP10 or ISO-SA2½ , blasting profile 50 – 125 µm (2.0 – 5.0 mils)
- Steel with suitable primer (NOVAGUARD 260) must be dry and free from any contamination

Substrate temperature

- 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 at least 20°C (68°F)
- No thinner should be added

Induction time

0 minute

Note:

- No induction time required

Pot life

1 hour at 20°C (68°F)

Note:

- See ADDITIONAL DATA – Pot life

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Airless spray

Recommended thinner

No thinner should be added

Nozzle orifice

Approx. 0.53 mm (0.021 in)

Nozzle pressure

At 20°C (68°F) paint temperature min. 28.0 MPa (approx. 280 bar; 4061 p.s.i.). At 30°C (86°F) min. 22.0 MPa (approx. 220 bar; 3191 p.s.i.)

Note:

- Use heavy-duty, single-feed, airless spray equipment, preferably 60:1 pump ratio and suitable high-pressure hoses

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Brush/roller

- Brush: for stripe coating and spot repair only

Recommended thinner

No thinner should be added

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

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ADDITIONAL DATA

Measuring wet film thickness

- A difference is often obtained between the measured apparent WFT and the real applied WFT. This is due to the thixotropy and the surface tension of the paint, which retards the release of air, trapped in the paint film for some time.
- Recommendation is to apply a WFT, which is equal to the specified DFT plus 60 µm (2.4 mils)

Spreading rate and film thickness	
DFT	**Theoretical spreading rate**
300 µm (12.0 mils)	3.3 m^2/l (134 ft^2/US gal)
600 µm (24.0 mils)	1.7 m^2/l (67 ft^2/US gal)

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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	3.5 days	48 hours	22 hours	15 hours	10 hours
	Maximum	3 months	3 months	2 months	1 month	14 days

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)	5 days
10°C (50°F)	60 hours
20°C (68°F)	27 hours
30°C (86°F)	18 hours
40°C (104°F)	12 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

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)	3 days	12 days	15 days
10°C (50°F)	40 hours	7 days	10 days
20°C (68°F)	18 hours	3 days	6 days
30°C (86°F)	12 hours	48 hours	4 days
40°C (104°F)	8 hours	24 hours	3 days

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

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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)	3.5 days
10°C (50°F)	48 hours
20°C (68°F)	22 hours
30°C (86°F)	15 hours
40°C (104°F)	10 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 testing.

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
10°C (50°F)	2 hours
20°C (68°F)	1 hour
30°C (104°F)	45 minutes

Note:

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

SAFETY PRECAUTIONS

- If workers are exposed to concentrations above the exposure limit, they must use appropriate personal protective equipment (PPE).
- Ventilation should be provided in confined spaces to maintain good visibility
- 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

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

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