Polyguard GFPN 3996

PHENOLIC NOVOLAC EPOXY WITH GLASS FLAKE

Product Description:

Polyguard GFPN 3996 is a two-component, amine adduct cured glass flake phenolic epoxy (novolac) high-performance coating with excellent water, chemical & abrasion resistance to a wide range of chemicals and solvents.

Typical Uses:

Ideal as an interior lining for tanks and pipelines carrying hot water, brine, crude oil, and potable water. It also serves as an external coating to protect insulated and uninsulated process pipework and vessels, even under extreme cryogenic or high-temperature conditions.

Features:

- Exceptional abrasion resistance, ensuring long-lasting durability.
- Suitable for both cryogenic conditions and high-temperature environments.
- Provides excellent protection for insulated (CUI) and uninsulated process equipment.
- Safe for use in potable water tanks.

Technical Properties:

Color / Shades	Grey & Black
Gloss	Flat
Volume Solids	80%
Specific Gravity	1.5 Kg/L, mixed
Mix ratio	3:1 by volume
Typical Thickness	800 micron [31.5 mils] dry equivalent to 1000 microns [39.4 mils] wet 1000 micron [39.4] dry equivalent to 1250 micron [49.2] wet
Coverage	10.7 m^2/liter at 75 microns DFT (theoretical)
Flash Point (Typical)	Base: 24^{0}C [75.2^{0}F], Additive: 28^{0}C [82.4^{0}F]
VOC	255 g/Liter
Reducer/Thinner	Thinner E1
Cleaner	Thinner C1

Drying Time

Surface Temperature	-5^{0}C	0^{0}C	5^{0}C	15^{0}C	23^{0}C
Touch	50 Mins	45 Mins	40 Mins	30 Mins	15 Mins
Handle	7 hours	5.5 hours	4.5 hours	3 hours	2 hours
Recoat	5 hours	4 hours	3 hours	2 hours	1 hour
Pot Life			5 hours	2 hours	1 hours

These figures are provided as a guideline only. Factors such as air movement and humidity should also be taken into account.

Surface Preparation:

Blast clean to Sa2½ BS EN ISO 8501-1:2007. Average surface profile in the range 50-75 microns.

Ensure surfaces to be coated are clean, dry and free from all surface contamination.

Manually prepared surfaces should be prepared to a minimum standard of St3 BS EN ISO 8501-1:2007 at the time of coating. Application to such surfaces should be by brush or roller where the mechanical action will aid adhesion.

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Application

Application Method	Thinning	Application Parameters	
Conventional Spray	10%	Atomising Pressure	2.8kg/cm² (40 psi)
		Fluid Pressure	0.4kg/cm² (6 psi)
		Nozzle Size	1.27mm (50 thou)
Airless Spray	-	Operating Pressure	155kg/cm² (2200 psi)
		Fan Angle	40°
		Nozzle Size	0.33 mm – 0.38 mm (13-15 thou)
Brush & Roller	-	The material is suitable for both brush and roller applications. Applying multiple coats may be necessary to achieve the same dry film thickness as a single spray-applied coat.	

Airless Spray

Adjust the pressure and spray tip to suit job-specific factors like hose length, paint temperature, and substrate shape. Use the lowest pressure that achieves proper atomization. Refer to TRPL for guidance if needed.

Conventional Spray

Thin with up to **10% Thinner E1** and adjust wet film thickness as necessary. Only use recommended thinners; alternatives like ketones can compromise curing.

Brush and Roller

- **Brush**: Use nylon or polyester bristles.
- **Roller**: Opt for a 3/8-inch woven roller with a solvent-resistant core.

Atomizing pressure and fluid pressure may need adjustments based on setup.

Maintain professional equipment calibration for optimal performance.

Note:

- The material is supplied in two containers as a complete unit. Always mix the entire unit in the proportions provided.
- Stir the base thoroughly for optimal results and homogeneity.
- Combine the entire contents of the hardener (Part B) with the base (Part A) and mix thoroughly using a power mixer before spraying. Continue mixing until the entire compound has been used, or use a steel rod to ensure complete homogeneity of the mixture.

Application Conditions

Temperature Requirements: Ensure the ambient temperature is above 0ºC during application. Applying the material at lower temperatures may affect its performance and adhesion, leading to compromised results.

Humidity Control: Maintain relative humidity below 90% throughout the application process. High humidity can interfere with the coating's ability to adhere properly and may cause surface defects or extended drying times.

Substrate Temperature: The substrate temperature must be at least 3ºC above the dew point and not lower than 0ºC to avoid condensation on the surface. Condensation can significantly affect coating performance and adhesion.

Curing Conditions: During curing, maintain a consistent temperature above 0ºC to ensure the coating develops its full water resistance and chemical resistance properties. Exposure to lower temperatures during curing can hinder the coating's performance and longevity.

Overcoating Guidance: For overcoating outside the times specified in the product datasheet, consult TRPL for expert guidance. Following the recommended overcoating windows ensures proper adhesion between layers and optimal coating performance.

Adhering to these conditions is essential for achieving the best results and maximizing the durability and effectiveness of the coating.

Additional Notes

- Physical data values may show slight variations between different batches.
- Drying and Curing Times: Drying times, curing times, and pot life are approximate and should be used as general guidelines.
- Application Temperature Limit: The maximum allowable air and substrate temperature during application is 50°C. Exceeding this limit may result in issues such as dry spray, bubbling, or pinholes.
- Epoxy Coatings - Color Stability: Polyguard FD68 may experience noticeable color changes over time, which do not affect performance. Touch-ups may be more visible due to these changes. Ultraviolet light exposure can cause a chalky appearance or color differences but will not compromise the system's effectiveness.
- Epoxy Coatings - Tropical Use: Avoid mixing epoxy paints at temperatures above 35°C, as this can reduce pot life by half and may cause poor adhesion. Thinning the mixture will not resolve these issues.

Storage

Shelf Life:

Base: 24 Months, when sealed

Hardener: 12 months, when sealed

Storage Conditions: Store indoors at 4.5^{0}C [40^{0}F] to 38^{0}C [100^{0}F]

The product must be stored in accordance with national regulations. Keep the containers in a cool and dry place and well-ventilated area with no direct source of heat or light. Containers must be kept tightly closed when not in use.

Safety: Handle with care. Before & during use, observe all safety labels on packaging and paint containers, consult Material Safety Data Sheets, and follow all local or national safety regulations. Avoid inhalation, avoid contact with skin & eyes, and do not swallow. Take precautions against possible risks of fire or explosions as well as protection of the environment. Apply only in well-ventilated areas.

Disclaimer: The information in this document is given to the best of TRPL's knowledge, based on laboratory testing & practical experience. TRPL products are considered semi-finished goods, as such products are often used beyond TRPL's control. TRPL can not guarantee anything but the quality of the product itself. Minor product variations may be implemented to comply with local requirements. TRPL reserves the right to change the given data without further notice. User should always consult TRPL for specific guidance on the general suitability of the product for their needs and specific application practices.