

# ShaliProtek<sup>®</sup> NES 100

2K Chemical & Heat Resistant VOC Free Novalac Based Epoxy



STP Limited

## Description

ShaliProtek<sup>®</sup> NES 100 is solventless, high heat resistant, amine adduct two component novalac epoxy system for protection of concrete, steel structure against splash and spillage of corrosive chemicals and solvents at higher temperature. It is an excellent coating system for secondary containment, solvent storage, pump pads, trenches, bridges and other high exposure zones. It also enhances the appearance of floor substrate while making the surface easy to clean.

## Product Information

<b>Form, Colour, Mixing Ratio</b>	Light Pink, two component Novalac Epoxy resin based with mixing ratio of Component A : Component B = 3 : 1 (v/v)
<b>Handling &amp; Storage</b>	Store under cover out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.
<b>Packaging</b>	Available in 200 L drum with 1 drum of Component B for every 3 drums of Component A (Plural feed spray), 10 L (Single feed spray) and 4L (Brush application) composite pack.
<b>Shelf Life</b>	12 Months from the date of manufacture when maintain in protected storage in original unopened sealed condition at 5 - 38°C.
<b>Handling Precautions</b>	As with all chemical products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use.

## Characteristics –Physical

Colour	Light Pink / Any Colour	Volumetric Ratio	3 : 1		
		Scratch hardness, kg	>3		
Application Temperature, °C	10 - 40	Volume Solid, %	98 ± 2		
Full Curing time (heavy traffic), days	5 - 7	Theoretical coverage*, DFT, m <sup>2</sup> / L	3.8, 250 Micron		
Recommended DFT (spray) / coat, μ	200 - 250		4.8, 200 Micron		
Recommended DFT (brush) / coat, μ	150 - 200		1.96, 500 Micron		
Recommended DFT (Plural feed Spray) / coat, μ	450 - 500	Mix Density at 25°C, gm / cc	1.45 ± 0.05		
Pot life @ 30°C, mins, 100 gm mix	25 - 35				
Drying time, 30°C	2 - 3	Heat Resistance Temperature, (Dry) °C, **	150 Continuous		
				• Touch dry, hrs.	8 - 16
				• Recoat Time, hrs.	20 - 26
• Hard dry (Light foot traffic), hrs.					

\*Depending upon surface condition. \*\* Aesthetic properties may suffer but protective properties will be retained

## Characteristics – Technical

Property	Method	Result
Shore D Hardness	ASTM D 2240	70 - 80
Elongation, %	ASTM D 638	15 - 20
Tensile Strength, N / mm <sup>2</sup>	ASTM D 638	20 - 25
Flash Point, °C	IS 101	>95
Salt Spray, 2000 hours	ASTM B 117	Pass
Abrasion resistance, mg loss	ASTM D 4060	75 - 85
Adhesion, N / mm <sup>2</sup>	ASTM D 4541	> 2.5 - for concrete >6 - for metal

<b>Chemical Resistance</b>	
• 50% Sodium Hydroxide Solution	+
• 98% Sulphuric Acid Solution	NR
• 20% Hydrochloric Acid Solution	+
• 10% Nitric Acid Solution	+
• 30% Nitric Acid Solution	NR
• Acetone	S3
• 10% Phosphoric Acid	+
• Diesel / Petrol	+
• Benzyl Alcohol	S2
• Diacetone Alcohol	S3
• Ethyl Alcohol	+
• Isopropyl Alcohol	+
• Methanol	S2
• Hydraulic Fluid	+
• Glacial Acetic Acid	NR

+ = Continuous Service (14 days), S1= splash and clean with weekly Cleanup, S2= splash and spill with 24 hour cleanup, S3= splash and spill with hourly cleanup, NR= Not recommended. Note: Many factors affect chemical resistance. Application, service and exposure temperatures and the type of impurities in the chemical or in the environment are to be considered.

### Field of Application

- Both horizontal and vertical surface of concrete and metal.
- Power plants, Food processing plants and Chemical plant / laboratories.
- Waste water treatment plant, industrial floors.
- Underground pipelines and steel tanks.

### Advantages

- Excellent resistance to Chemicals and Solvent
- Low Odor and permeability
- Resistance to high temperature
- Resistance to cracking
- Flexible with no amine blush

### Application Methodology

#### ➤ Surface Preparation

- Steel: blast cleaned to **ISO-Sa21/2** and remove dust, flakes, oil, grease or other loose foreign particles.
- In case of concrete, ensure the concrete is at least 28 days sold and remove any loose foreign particles by compressed air and cleaned to **SSPC SP 6**.
- Mechanical preparation is the preferred method of preparing concrete for coating application. Shot blasting, diamond grinding are all acceptable methods.
- Voids, cracks and imperfections will be seen in finished coating if the concrete is not patched properly. For patching related problems contact our technical representatives.
- To avoid condensation of moisture onto the coating substrate prior to application, RH should not be above 80% and substrate temperature should be at least more than 3°C above Dew point

#### ➤ Material Preparation

##### ➤ Plural Feed Application

- Pre heat part-A @ 60 - 75°C and Part-B @ 45 - 50°C.
- Ensure that there is no entrapped air.

##### ➤ Single Feed/Brush Application

- Stir drums of each component of **ShaliProtek® NES 100** thoroughly to a homogenous and uniform mix with a slow speed stirrer fitted with a suitable mixing paddle.
- Stir drums of component A (resin part) thoroughly for uniformity. For best result, use a variable speed mixer with a spiral type lades at the bottom of stirrer rod. The speed may be 100-200 rpm.
- Then mix the entire component A and component B, which are pre-weighed.

- Place the spiral blade at the bottom of the container before starting the mixer. This will help avoiding inducting air into the mass. Slowly move the stirrer head up to the surface while stirring. Do not remove the blade while still it is spinning. This procedure is continued for 5 minutes up and down to have a homogeneous mixing.
- Thinner should not be added and the ambient temperature should be between 10 - 40°C.

#### ➤ Application of Material

- Apply **ShaliProtek® NES 100** direct to metal / concrete immediately after blasting / air drying or prime the surface with any epoxy primer. We recommend **ShaliPrime Zn Ph 60 / ShaliPrime Zn R / ShaliPrime 2E SF**. Allow the primer to touch dry. DFT of the applied primers should be between 50 - 100 μ. **Primer application is totally optional.**
- Apply **ShaliProtek® NES 100** by **brush** at 150 - 200 μ WFT or with medium or short nap squeegee rollers. In case of single feed airless spray, apply at **200 - 250 μ** WFT using standard equipment having tip size of 0.48 - 0.88 mm and tip pressure 210 - 250 kg / cm<sup>2</sup>.
- In case of plural feed spray application, first coat of **ShaliProtek® NES 100** on the prepared surface by plural feed airless spray @ 450 - 500 μ WFT.
- The tip pressure typically should be 2500 - 4000 psi (the tip pressure should be adjusted to achieve good atomization of the spray). Tip size typically should be 32 - 40 Thou orifice.
- If 2<sup>nd</sup> coat is required, apply after the 1<sup>st</sup> coat has dried (6 - 8 hours at 30 °C). Should the application of the 2<sup>nd</sup> coat be delayed, wipe with a suitable solvent before application.

#### Precautions

- Multiple coats may be required in order to have high dry film thickness.
- Common to all epoxies, this product will be subjected to discoloration on prolonged exposure to sunlight and heat. However, this phenomenon is not malefic to coating performance.
- Exposure to very low temperature, high humidity, rain, water ponding during and after application may lead to incomplete curing and the above-mentioned coating properties may not be achieved.
- Additional losses, wastage, surface profile, ambient conditions should also be taken into consideration while correlating paint consumption and achieved DFT in case of field application.

#### Value base of product data

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control and different test methods.

#### Health and Safety information

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent **Material Safety Data Sheet**.

- Avoid contact with eyes and skin.
- Wear suitable protective clothing such as overalls, goggles, dust mask and gloves. Ensure that there is adequate ventilation in the area where the product is being applied.
- Do not breathe in vapour or spray mist.
- This product is flammable.
- Keep away from sources of ignition.
- In case of fire, blanket flames with foam, carbon dioxide or dry chemicals.
- Eye protection during application is recommended.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- In case of skin contact, wash with soap and plenty of water. Get medical attention if irritation develops or persists.

#### Cleaning & Maintenance

- Clean all tools immediately after use with STP Thinner only. Do not allow the material to harden.



**STP Limited**  
*Enhancing Structures' Life*

#### Product Range

- Waterproofing and Insulation ■ Road Surfacing
- Sealants and Additives ■ Pipeline Coating
- Protective / Anti-Corrosive Coating ■ Epoxy Flooring
- Grouts / Admixtures ■ RestoFix- Repair / Rehabilitation
- Other Construction Chemicals



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