

ShaliProtek® PC N

2K Polyurethane Brushable Protective Coating



Description

ShaliProtek® PC N is a two component, high build, polyurethane based flexible coating, which is to be used as topcoat in atmospheric environments. It offers good operational performance including adhesion, abrasion scratches, impact, humidity condensation and splashes of mild chemicals, when applied over suitable and properly primed surfaces and is safe to use in potable water services.



Product Information

Form, Colour, Mixing Ratio	Grey, two component Polyurethane Resin based solvent borne coating with mixing ratio of Component A : Component B = 3.5 : 1 (v/v)
Handling & Storage	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.
Packaging	Available in 21.5 L unit pack comprising 16.67 L of Comp A & 4.83 L of Comp B
Shelf Life	12 Months from the date of manufacture when maintain in protected storage in original unopened sealed condition at 5 - 38°C.
Handling Precautions	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.

Technical Characteristics at 27°C, 60% RH

Property	Method	Result
Recommended Wet Film Thickness / coat, μ	ASTM D 4414	100 - 150
Theoretical Consumption, ** m^2 / L	IS 101	7 - 9.5
Volume Solid, %	ASTM D 2697	95 \pm 3
Pot life, 100 grams sample, minutes	ASTM D 2471	40 - 50
Touch dry, hours	IS 101	1 - 2
Surface dry, hours	IS 101	4 - 6
Scratch Resistance @ 200 μ DFT	ASTM G 171	Pass upto 3 kg
Elongation after 7 days, %	ASTM D 638	35 - 45
Tensile Strength after 7 days, MPa	ASTM D 638	4 - 7
Shore A hardness, after 7 days	ASTM D 2240	80 - 90
Density of mix, kg / L	ASTM D 1457	1.45 \pm 0.05
Flash Point, °C		
• Component A	ASTM D 93	>100
• Component B		>100
Adhesion pull-off, MPa, 7 days		
• On Steel	ASTM D 4541	4 - 6
• On Concrete		2 - 3 (Concrete failure)
Flexibility @ 12 mm mandrel	ASTM D 522	Pass
Salt Spray, 2000 hrs., @ 300 microns DFT	ASTM B 117	Passes
Abrasion Resistance 1000 cycles, CS 17, mg loss	ASTM D 4060	115 \pm 10

** Depends upon surface profile, application wastage during application has to be taken into consideration.

The values are subjected to 5 - 10% tolerance.

Field of Application

- Crude oil storage tanks / underground structures
- On shore and off shore structures, pipes and marine piles
- Sewer lines and STP tank
- Hydro-electric penstocks and dam gates

- Inner / Outer coating for pipe line for water and waste water
- Steel / concrete structure like
- Storage tanks

Advantages

- Application friendly formulation helps in easy application by brush or airless spray.
- Flexible anti-corrosive / preventive coating for structures – MS or concrete – even where the structure is in continuous contact with water.
- Provides excellent resistance to corrosion, impact, thermal shock and abrasion.
- Cures to a hard, smooth and flexible surface with excellent resistance to sea / salt water, oil, acids, alkalis, crude oil and minerals.

Application Information

- ✓ **Substrate Temperature** +10°C Min / +40°C Max
- ✓ **Ambient Temperature** +10°C Min / +40°C Max
- ✓ **Substrate Moisture Content** < 2%

Application Methodology

➤ Surface Preparation

- Steel surfaces shall be clean and free of dirt, oil, or other contaminants prior to abrasive blasting. Slivers, rough welds or other defects in the steel shall be ground out prior to abrasive blasting. Abrasive blasting shall be carried out to a near-white metal.
- Abrasive blast cleans the surface to NACE No.2 / SSPC-SP 10 near-white metal, ISO 8501 Sa 2.5.
- During the blasting operation and until the final coating procedure has been finished, the temperature of the steel shall not be less than 3°C above the dew point. Application of **ShaliProtek® PC N** should be straight after steel preparation to prevent surface rusting.
- In case of new concrete, ensure the concrete is at least 28 days old and remove any loose foreign particles by compressed air.
- 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

- Stir drums of each component of **ShaliProtek® PC N** thoroughly to a homogenous and uniform mix with a slow speed stirrer fitted with a suitable mixing paddle.
- Combine Component A and B in a suitably sized container.
- Mix properly for 5 - 7 minutes with a slow speed stirrer until a homogeneous colour is achieved. Keep the paddle below the surface to avoid entrapping air. **Do not mix by hand.**
- The temperature of the mixed base and hardener should preferably be more than 12°C, otherwise extra thinner may be required to obtain application viscosity.
- Thinner addition results in reduced sag resistance, volume solid and DFT.
- Apply the material as supplied, do not dilute with thinner.

➤ Application of Material

- Apply **ShaliProtek® PC N** direct to metal immediately after blasting or prime 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.
- Apply first coat of **ShaliProtek® PC N** on the prepared surface by brush / roller / spray.
- Allow it to touch dry as per our technical data sheet (depending on ambient condition).
- The 2nd coat, if required should be applied only after the first coat has dried (5 - 8 hours) at 30°C. If the application of the 2nd coat is delayed by 16 hours, wipe with a suitable solvent before application.
- In case of airless spray, use standard equipment having pump ratio of 60:1 or higher, tip size of 0.58 - 0.88 mm and tip pressure 210 - 250 kg / cm².

➤ Repair Procedure

- Small area repairs – Areas of damage in the coating up to 1000 cm² may be fixed by grinding out the defective area using an angle grinder or similar tool fitted with an abrasive disc and abrading the surrounding area to attain a transitional bond with the undamaged coating.

- The entire area may then be coated by brush or spatula using **ShaliProtek® PC N**.
- Large area repairs – areas larger than those above are recommended to be prepared in the same manner and then repaired by single feed spray application.

Precautions

- Multiple coats may be required in order to have high dry film thickness.
- As with all aromatics, this product will be subjected to colour change on prolonged exposure to sunlight. 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, blistering 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**.

- **This product contains Isocyanate.** 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.
- Hardened materials have to be removed mechanically.



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