

ShaliUrethane[®] PC

2K Zero VOC Polyurethane Protective Tough Coating



STP Limited

Description

ShaliUrethane[®] PC is a two component; spray applied by plural component airless spray gun, solvent free, fast curing, protective polyurethane tough coating for external / internal surface of concrete / steel pipes and structures. It is ideally suited for application where higher DFT is required as protective barrier as it has excellent film build capabilities and can achieve high thickness in microns on wet-on-wet basis in single coat.



cftri

Approved

Approvals / Standards

USFDA-175.300, contact with potable water.

Product Information

Form, Colour, Mixing Ratio	Grey, two component Polyurethane resin based with mixing ratio of Component A : Component B = 3 : 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 200 L drum with 1 drum of Component B for every 3 drums of Component A.
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 30°C, 60% RH

Property	Method	Result
Recommended Wet Film Thickness/ coat, μ Static Vertical surface Rotating Vertical Surface*	ASTM D 4414	450 - 500 800 - 1000
Theoretical Consumption ** m^2/L	IS 101	1 - 2
Volume Solid, %	ASTM D 2697	100
Pot life, 100 grams sample, minutes	ASTM D 2471	2 - 4
Touch dry, minutes	IS 101	20 - 30
Surface dry, hours	IS 101	4 - 6
Accelerated weathering, 2000 hrs.	ASTM G 154	No Blister / Flaking
Elongation after 7 days, %	ASTM D 638	35 - 45
Tensile Strength after 7 days, MPa	ASTM D 638	5 - 8
Shore D hardness after 7 days	ASTM D 2240	55 - 60
Density of mix, Kg/L	ASTM D 1457	1.41 \pm 0.03
Flash Point, °C • Component A • Component B	ASTM D 93	>100 >100
Adhesion pull-off, MPa, 7 days ✓ on steel ✓ on concrete	ASTM D 4541	6 - 8 2 - 3 (Concrete failure)
Water vapour transmission, $g / m^2 / 24$ hrs.	ASTM E 96	< 0.24
Salt Spray, 5000 hrs. @ 500 microns DFT	ASTM B 117	Passes
Abrasion Resistance 1000 cycles, H-10, mg loss	ASTM D 4060	45 - 65

*Rotation time depends upon gel time, ambient condition

** 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

- On shore and off shore structures, pipes and marine piles.
- Sewer lines and STP tanks.
- Thermal power cooling plants including basins.
- Hydro-electric penstocks and dam gates.
- Inner / Outer coating for pipe line for water and waste water.
- Steel / concrete structure like
 - Storage tanks.
 - Mounded bullets.
 - Reservoirs.
 - Overhead tanks.
 - Marine and offshore structures.
 - Ship decks / ship hulls.
- Concrete tunnel.
- Coating for pipes used for bore / directional drill applications.
- Repair / rehabilitation (recoating) of existing pipelines and coating repairs.

Advantages

- Excellent resistance to sea water.
- Excellent adhesion to steel / concrete.
- Excellent resistant to most of chemicals / acids.
- Resilient to accelerated weathering conditions.
- High mechanical / physical properties.
- High abrasion resistance.
- Protects against microbiologically induced corrosion.
- VOC Free.
- Suitable for potable water pipe line / waste water applications.

Application Information

- ✓ **Substrate Temperature** +10°C Min / +40°C Max
- ✓ **Ambient Temperature** +10°C Min / +40°C Max
- ✓ **Substrate Moisture Content** < 5 %

Application Methodology (Video)

➤ 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 **ShaliUrethane® PC** 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 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.
- Pre heat part-A @ 60 - 75 and Part-B @ 30 - 40°C.
- Once Component B drum is open, use within the same day.

➤ Application of Material

- Apply **ShaliUrethane® PC** 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 **ShaliUrethane® PC** on the prepared surface by plural feed airless spray @ 450 - 500 μ WFT for static vertical surface or 600 - 1000 μ WFT for rotating vertical surface.
- 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.
- 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 27 - 35 Thou orifice.

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.



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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