

## TWO COMPONENT HYBRID POLYURETHANE PROTECTIVE COATING

### PURPOSE

- Complete tanking and encapsulation system
- Industrial coating system: Coating and lining in secondary and primary containment of Tanks, Vessels, Structures, Channel and Fire Water Tank
- Structure foundation waterproofing to prevent water penetration to concrete foundations and structures
- For marine, offshore submerged/splash zones and other applications
- For protection of structures against aggressive chemical (pH 1 – 13) to high concentration and industrial wastewater
- For protection of structures against petroleum products – crude oil, aviation fuel, kerosene, etc.

- Adequately strong adhesion to various substrates. It bonds strongly to concrete, ferrous and non – ferrous metallic surfaces, wood, bitumen, asphalt, FRP, and various insulation materials
- Resistance to mechanical abuse and wear, high resistance to abrasion, erosion, indentation and impact (mechanical and environmental). Chemical resistant and physical impermeability to chloride and sulphates
- Resistance to UV radiation, effects of cycles/swings of high/low temperatures, humidity and soil stress
- Ecologically friendly: solvent free which eliminates volatile emission in the environment
- Ease of application: Compared to most other high performance coatings which require complicated spray machine, Souplethane 5 is applied with equal ease using brush, roller, squeegee and twin component high pressure airless spray machine

### PROPERTIES

- Mechanically strong and flexible enough to allow crack bridging in excess of 2mm while bonding to the substrate
- Flexible polyurethane/ polyurea protective coating, uniquely designed, fine-tuned resulting in a balanced characteristics and features
- High build with excellent cohesive strength. High thickness can be obtained from thin to thick film by subsequent layers for special applications
- Continuous film and lining – it is seamless, pinhole free continuous anti – slip surface

### TECHNICAL DATA

|                                |                |
|--------------------------------|----------------|
| <b>Color</b>                   | : Grey & Cream |
| <b>Density</b>                 | : 1.3 kg/ltr   |
| <b>Adhesion</b> (ASTM D4541-1) |                |
| a. Concrete                    | : >3.5 MPA     |
| (Concrete Failure)             |                |
| b. Steel                       | : >10 MPA      |
| <b>Tensile Strength</b>        | : 18 MPA       |
| (ASTM D412)                    |                |
| <b>Elongation</b>              | : 50%          |
| <b>Abrasion Resistant</b>      | : Excellent    |
| (ASTM D4060)                   | (CS-17 Wheels) |
| <b>Chloride Permeability</b>   | : 100 coulombs |
| (ASTM 1702-02)                 | (Negligible)   |

|                                             |   |                          |
|---------------------------------------------|---|--------------------------|
| <b>Crack Bridging</b><br>(LCPC, 97(7))      | : | 2.2 mm                   |
| <b>Shore Hardness</b><br>(ASTM 2240)        | : | 90-95 Shore 'A'          |
| <b>Negative Pressure Resistance</b>         | : | 10 bars<br>(102 m. Head) |
| <b>Water Permeability</b><br>(DIN 1048 (4)) | : | No penetration           |
| <b>Solid Content</b>                        | : | 100%                     |
| <b>Flash Point</b><br>(Open Zahn Method)    | : | 248°C                    |
| <b>Service Temperature</b>                  |   |                          |
| a. Non-immersion                            | : | -50°C to +140°C          |
| b. Immersion                                | : | -50°C to +70°C           |

### **Chemical Resistance**

**Salt Spray** More than 200 hrs.  
(ASTM B117(6) & ASTM B164(5))

**Chemical Resistance in Immersed Condition**  
\*Excellent in Sewage water, Acid, Alkalis,  
Seawater and Salt Solution

### **Application Properties**

|                     |   |                                    |
|---------------------|---|------------------------------------|
| <b>Mixing Ratio</b> | : | 3 base : 1 hardener<br>(By Volume) |
| <b>Pot Life</b>     |   |                                    |
| @20°C               | : | 30 mins                            |
| @30°C               | : | 20 mins                            |
| <b>Tack Free</b>    |   |                                    |
| @25°C               | : | 2 hrs                              |
| @35°C               | : | 1 hr                               |
| <b>Full Cure</b>    |   |                                    |
| @25°C               | : | 7 days                             |
| @35°C               | : | 1 day                              |

### **Technical Support**

**RezCoat** provides technical service from inception with consulting Engineering and specifying bodies to onsite technical support throughout Middles East.

## **APPLICATION REQUIRMENTS**

### **Surface Preparation**

#### **For Concrete:**

The surface should free of contamination, well cured, solid, dry with surface moisture <5% and free of laitance, dust, loose particles, foam oil and release agent or any other type of chemical. Clean any contamination with steam, degreaser as appropriate. Deep contaminations by means of mechanical blasting, scrubbing or other means. Protrusions/ridges, rout out surface cracks and cut V-grooves, clean the surface of all loose particles and dust, fill all exposed blowholes, routed out cracks with **Resiputty 050 EP**.

#### **For Steel:**

The surface should be free of contamination and prepared to (Sa2½) of SIS 05-5900. Use of steam water or degreaser to clean contamination. For corrosion and scales abrasive blast should be used, if not possible use brush or grinder, prevent polishing metal surface. Grind, cut any protrusion/ridges to remove weld slag and splatter. Render pitted steel surface including damaged regions with **Resiputty 050 EP**. Cold welding to close holes using **Souplethane 5**, thin coat pressing a piece of steel and leave to cure for few hours.

### **Priming**

#### **For Concrete:**

**Resiprime Primer C111**. Mix the primer thoroughly before application. The surface to receive primer should be well vacuumed. Ambient temperature should be about +5°C. Apply the primer at a rate 6 to 8m²/ltr. To saturate the substrate to be coated with **Souplethane 5**. Allow the primer dry prior to apply the coating.

#### **For Steel Surface:**

Mix the **Resiprime Primer P111 or P112** thoroughly before application. Immediately apply over well prepared surface at temperature >3°C above dew point in one thin layer (about 30 to 50 microns) by brush roller or single component air spray. Over coating time after touch dry to be at maximum of 8 hours. Beyond this limit, abrasive blast, remove the primer and reapply.

## **Application**

1. **Souplethane 5** shall be applied when ambient temperature is above -10°C or below 50°C, and relative humidity is below 90% and air temperature is 3°C above dew point. Protect the area to be coated from direct sunlight by suitably erecting sunshades or by other means to allow proper wetting of the surface, avoid rapid curing. On a given day, the area of coating must be defined such that all coats necessary to achieve the required thickness are done preferably the same day within the maximum inter-coat interval. In summer, program activity during cool parts of the day.

2. Mix thoroughly the base separately using power mixer. Take 3 parts of Base by volume and add to it 1 part of hardener by volume and mix them together until a uniform color is achieved. Make sure total mixing quantity should not exceed 2 Lit.

3. Apply **Souplethane 5** by brush, roller and squeegee or by twin airless spray machine. Apply the first coat in a thin layer 250 to 300 microns with a brush or roller. After the first coat, apply subsequent coats in one or more layers to achieve the required thickness. Over coating shall be completed within the inter-coat interval as detailed below:

| <b>Temperature</b> | <b>Over coating Period</b> |             |
|--------------------|----------------------------|-------------|
|                    | (Min hours)                | (Max hours) |
| a. 20°C            | 3                          | 24          |
| b. 30°C            | 2                          | 16          |
| c. 50°C            | 1                          | 6           |

Additionally, to increase the pot life under extremely hot conditions, cool the hardener before mixing. The base should be conditioned at 27°C (air-conditioned) prior to mixing for optimum pot life.

4. At discontinuities/singularities, such as pipe up-stand, penetrations, skirting, rivets, bolts, etc. impregnate into a freshly applied first coat of **Souplethane 5** a band 15-20 cm wide of fiber cloth and cover this completely by subsequent layer of **Souplethane 5**.

5. If additional antiskid finish is required, apply on the dry first layer, another coat (approx. 500 to 800 microns) then immediately broadcast dry, clean sand aggregate up to 0.8mm in size. Allow to dry, then vacuum excess sand and apply a final thin layer to seal sand grain in.

## **Reinforcement with Fiberglass:**

The tensile strength and crack bridging capability of the product can be enhanced by use of Fiberglass reinforcement.

In this case into the first topcoat, while wet embed the fiberglass reinforcing by pressing into the wet layer, without waves being allowed to develop in the cloth, and edging shall be particularly well pressed in. A second coat is then applied onto the surface to fill over the undulations in the cloth. The cloth shall consist of a weight at least 75 to 110 gm per square meter.

All edges shall be well wetted to ensure that overlaps are completely embedded and no penetration lines developed.

The coatings can be applied up to 5mm as demanded by the application specification.

## **Packaging**

|                              |   |             |
|------------------------------|---|-------------|
| <b>Souplethane 5</b>         | : | 30 kg/pack  |
| <b>Resiprime Primer C111</b> | : | 18ltr/can   |
| <b>Resiprime Primer P111</b> | : | 1 ltr/can   |
| <b>Resiprime Primer P112</b> | : | 1 ltr/can   |
| <b>Rezkem Solvent SC111</b>  | : | 18 ltr/pail |

## **Coverage**

|                              |   |                           |
|------------------------------|---|---------------------------|
| <b>Souplethane 5</b>         | : | 1.3 kg/m <sup>2</sup>     |
| <b>Resiprime Primer C111</b> | : | 6-8 m <sup>2</sup> /ltr   |
| <b>Resiprime Primer P112</b> | : | 15-20 m <sup>2</sup> /ltr |

## **HEALTH AND SAFETY**

All products contain solvent or resin, should not come in contact with skin, eyes or swallowed. People sensitive to resin and chemical should wear goggles and PVC gloves. Avoid contact with skin and eyes when handling the products. Do not use solvent for skin remover of resin, instead a barrier cream remover must be used before it gets harden. Should accidental eye contamination occur, wash thoroughly with plenty of running water and seek medical advice. Ensure plenty of ventilation when using resin and solvent containing materials.

## Storage

Store under cover out of direct sunlight in dry area, the product should be unopened. All products have 12 months shelf life. If stored at high temperature, the shelf life may be reduced.

## Cleaning

Tools and equipment should be cleaned with **Rezkem Solvent SC111** cleaning solvent. Do not use the solvent for thinning, as it will inhibit the materials properties.

## Fire

**Souplethane 5** is a non -flammable product.

**Resiprime Premiers** and **Rezkem Solvent SC111** is a flammable material; avoid formation of flames and sparks near the product.

In the event of fire, use CO<sub>2</sub> or foam extinguisher. Do not use water.

### DISCLAIMER

This product is specially formulated and manufactured by Rezayat Protection Coatings Company Ltd (Rezcoat) and sold subject to its standard terms and conditions. The information presented herein is accurate to the best of our knowledge. All technical properties quoted forthwith are from laboratory prepared samples and RPCCL reserve the right to alter any of the detail herewith without notice. The users are advised to ensure they possess the latest issue of the datasheet. The information given must not be taken in any way to form a specification. RPCCL will not accept any liability for any consequent or incidental damage arising out of use of the product. All guarantees offered are limited to replacement of defective material only. The use of the products outside of RPCCL recommendation is under user own risk.

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