

# ECO-PURE POLYUREA

## Product Description:

**Eco-pure Polyurea** is a very fast set, 2-component, 100% solid flexible coating derived from a reaction of an isocyanate prepolymer and an amine terminated resin blend. It is designed to protect and coat concrete, metal, wood, ceramic, geotextile surfaces. The product reacts within seconds and once cured, leaves a flexible, durable, tough surface. The material must be applied utilizing high pressure, heated plural component spray proportioning equipment.

## Properties:

- 100% solid, VOC free, no solvents
- No catalyst
- Fast reactivity and fast return to service time
- Seamless and jointless coating
- Little or no odor
- Excellent thermal stability
- Water resistant
- Excellent adhesion on concrete, steel, aluminum, plastics, fibers, wood, foam etc.
- Excellent flexibility
- Non sensitivity to temperature and humidity
- Excellent chemical resistance
- Excellent impact and abrasion resistance
- Anti-corrosive
- Very good tensile and structural strength
- UV, chlorine and saltwater resistant
- High application thickness possible
- Variable application thickness possible
- Broad color spectrum

## Application:

- General water isolation –water tanks, pools, swimming pools, ponds, water pipes, membranes, waste water treatments, manholes, sewer -lining, roofs
- Floors –industrial floors, hospitals, factory, auto parks, garage
- Construction – roads, bridges, railways, high speed railways, tunnels, airports
- Marine industry
- High abrasion applications –oil and gas industry, refineries, pipelines, petrochemical industry, mining, secondary containment, energy industry
- Leisure industry- water parks, aquariums, play grounds, decorative applications

## Instructions:

- Surface preparations strongly affect coating performance. Concrete substrates must be prepared mechanically using abrasive blast cleaning to remove cement laitance and achieve an open textured surface. Weak concrete must be removed and surface defects such as voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids and surface levelling must

be carried out using appropriate products. The application surface has to be primed in order to achieve an even surface and good adhesion.

- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum. For application pull off strength of the surface should be min. 1.5 N/mm<sup>2</sup> and concrete residual moisture should be max. 6 %.
- Isocyanate prepolymer and amine resin must be applied using a 2-component high pressure spray machine
- Amine component must be stirred using a barrel mixer.

#### Packaging:

- 200 kg - barrel (Amine side)
- 225 kg - barrel (Iso side)

#### Storage And Shelf Life:

Polyurea components are sensitive to moisture. Keep polyurea components in closed containers. Store the product in a ventilated place away from direct exposure to sunlight. Keep polyurea components between 20 -30 °C for quality reasons. Shelf life of the unopened original packaging is nine months from manufacturing date.

#### Safety:

Contains isocyanate MDI. Avoid breathing vapors. Avoid contact with skin and eyes. Take precautions during application. Wear suitable protective clothing, gloves and eye/ face protection. Adequate ventilation of the working area is recommended.

Consult SDS for further information.

#### Restriction:

Aromatic polyurea coating systems are UV-stable but are not color stable. The cured coating system may exhibit discoloration when exposed to sunlight. This does not influence the physical properties of the material.

**Component Properties:**

|                         | Unit              | Method      | MDI Prepolymer (A) | Amine Resin (B) |
|-------------------------|-------------------|-------------|--------------------|-----------------|
| <b>Density (25°C)</b>   | g/cm <sup>3</sup> | ASTM D 1217 | 1.11±0.03          | 1.02±0.02       |
| <b>Viscosity (25°C)</b> | mPa.s             | ASTM D 4878 | 700-800            | 300-600         |
| <b>Shelf life</b>       | -----             | -----       | 9 months           | 9 months        |

**Component Properties:**

|                         | Unit      | Value                 |
|-------------------------|-----------|-----------------------|
| Mix Ratio               | By volume | A: 100 B: 100         |
|                         | By weight | A: 112 B: 100         |
| Application Temperature | °C        | A: 70-80 B: 70-80     |
| Process Pressure        | Bar       | A: 150-200 B: 150-200 |

## Physical Properties:

|   | Method        | Value                           |
|---|---------------|---------------------------------|
| <b>Chemical Structure</b>                   |               | A: MDI Prepolymer               |
|   |               | B: Amine Resin                  |
| <b>VOC content (%)</b>                      | ASTM D1259    | 0                               |
| <b>Solid content (%)</b>                    | ASTM D2697    | 100                             |
| <b>Gel time (sec.)</b>                      | --            | 5-10                            |
| <b>Tack free time (sec.)</b>                | --            | 15-25                           |
| <b>Recoat time (hr.)</b>                    |               | 0-6                             |
| <b>Density (g/cm<sup>3</sup>)</b>           | ASTM D792     | 0,99-1,03                       |
| <b>Tensile strength (MPa)</b>               | ASTM D638     | ≥ 15                            |
| <b>Modulus (MPa)</b>                        | ASTM D638     | 100 % elongation ≥10            |
|   |               | 300 % elongation ≥12            |
| <b>Elongation (%)</b>                       | ASTM D638     | ≥375                            |
| <b>Hardness (Shore D)</b>                   | ASTM D2240    | 35-40                           |
| <b>Hardness (Shore A)</b>                   | ASTM D2240    | 90-95-92                        |
| <b>Tear strength (N/mm<sup>2</sup>)</b>     | ASTM D 624    | ≥40                             |
| <b>Taber abrasion (mg)</b>                  | EN ISO 5470-1 | <100 (H22 wheel , 1000 cycles ) |
| <b>Pull off strength (N/mm<sup>2</sup>)</b> | ASTM D 4541   | Concrete : ≥2.5 Steel: ≥6       |



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