

# ECMACOAT FLEX PUR 20

**Two-component, highly elastic, spray-applied, hybrid polyurea waterproofing membrane**

## Description

ECMACOAT FLEX PUR 20 is a two component, hot spray applied, fast curing, solvent free, hybrid Polyurea membrane designed for variety of high-performance waterproofing and protective coating applications where high degree of chemical and mechanical resistance is required. It is very reactive and applied with two component, high pressure, hot spray machine.

## Advantages

- Forms a jointless and seamless, monolithic surface and can be applied on simple & complex architectural surfaces, vertical surfaces, etc.
- Excellent physical & mechanical properties: high tensile strength, excellent crack-bridging ability, abrasion resistance, etc.
- Flexible, Seamless and fully bonded membrane.
- Adheres well to almost any substrate with suitable primer.
- Quicker application with Spraying machine and it cures in seconds. The waterproofed area can be returned to service immediately.
- 100% solids, "no VOC" and odorless.

## Uses

- Waterproof and protective coating for concrete, steel, substrates in variety of applications like
- Podium decks, Roof gardens, Green roofs
- Swimming Pools, Water Tanks
- Cut and cover tunnels.
- Waste Water treatment plants, Sewage effluent pipelines.
- Steel and concrete pipes.

## Technical Specifications - Application

|  |                            |              |
|--|----------------------------|--------------|
| Chemical Base  | Polyurea                   |              |
| Solids by volume   | 100%                       |              |
| Mixing Ratio (Part A: Part B) v/v                                      | 1:1                        |              |
| Viscosity, cps @ 25°C  | Part A                     | 400-800      |
|  | Part B                     | 400-800      |
| Specific Gravity @ 25°C  | Part A                     | 1.134± 0.02  |
|  | Part B                     | 1.018 ± 0.02 |
| VOC Content  | ~Zero                      |              |
| Processing temperature (Flow heater, Hose heater)                      | 65-75°C                    |              |
| Processing pressure, Bar (Part A & Part B)                             | 150-200                    |              |
| Tack free Time (@27°C, 65% R.H.)                                       | <15 Sec                    |              |
| Overcoat Time (min. & max.)  | 60 Sec, < 24 hrs           |              |
| Substrate Moisture Content   | <4%                        |              |
| Application Temperature Range  | +5°C to +40°C              |              |
| Theoretical coverage   | 1.1 kg /mm /m <sup>2</sup> |              |
| Maximum relative humidity (during application)                         | 85%                        |              |
| Full-Service Use   | ~72 hrs                    |              |
| Packing: 410 Kg (A Component - 210 kg Drum, B Component - 200 kg Drum) |                            |              |

## Technical Properties - Cured Membrane (2 mm thickness)

|   |                           |
|---|---------------------------|
| Elongation at break 7 days, ASTM D412 %                                   | 550 ± 50 %                |
| Tensile Strength, 7 days, N/mm <sup>2</sup> ASTM D412                     | 17 ± 2 N/mm <sup>2</sup>  |
| Tear Strength 7 days, N/mm <sup>2</sup> ASTM D412                         | 60 ± 10 N/mm <sup>2</sup> |
| Hardness (Shore A)  | 80 ± 5                    |
| Crack bridging capability   | >3 mm                     |
| Service temperature range   | -40°C to +120°C           |
| Chemical Resistance<br>(oils & fuels, sea water, diluted acids & alkalis) | Resistant                 |
| Plant Root Resistance   | Resistant                 |
| Packaging (Part A & Part B)   | 200+210 Kg Drums          |
| Shelf Life (when stored at 25°C, 65% R.H.)                                | 12 months                 |

## Application Guidelines

### 1. Surface Preparation:

**Concrete Surfaces:** Concrete substrate should be sound and at least 28 days old before applying ECMACOAT FLEX PUR 20. Make corner fillets and treat all cavities, voids, cracks and construction joints in substrate with Polymer mortar. All moving cracks and joints shall be sealed with flexible sealants like ECMASEAL PU 1K or ECMASEAL M.S. It is important to remove/clean loose particles, dirt, contaminants, laitance, weak concrete, paint residue, grease from the surface by chipping, grinding with suitable equipment such as grinder, wire brush, etc. to expose blow holes, and to produce a sound concrete surface with adequate profile and then vacuum cleaned.

**Metal Surfaces:** The substrate is prepared by brushing, rubbing, sandblasting, etc. and it is then thoroughly cleaned using an industrial vacuum cleaner so that the surface is dry, stable and free from rust or corrosion of any type, paint residue, loose materials, oil, grease, dust, etc. which may prevent adhesion.

### 2. Priming

On Concrete surfaces, apply PU primer ECMACOAT PUPRIME @ 0.15-0.20 Kg/ Sqm for better adhesion. Ensure substrate is dry and surface moisture content is <5% prior to primer application. ECMACOAT FLEX PUR 20 may be applied 3-4 hours after the application of the polyurethane primer and while the surface is still tacky. In any case, the waiting time after the application of the primer should not exceed 24 hours.

On Metal surfaces, apply the two-component, epoxy primer ECMACOAT 405 by brush, roller or spray in two coats. The second layer may be applied as soon as the first one has dried. ECMACOAT FLEX PUR 20 is applied within 24 hours from priming.

### 3. Pre-heating & Mixing:

Components A and B are packaged in separate containers. Need preheating of Components A & B to ~65°C-70°C to precondition both the components prior to application. Still well & mix both Part A & Part B separately before use to homogenize the contents. Mixing well is important as the toner in B Component may be settled down to bottom.

## 4. Application

**Equipment:** ECMACOAT FLEX PUR 20 can only be applied by an experienced crew using a suitable two component heated, high-pressure, proportioning spraying equipment fitted with suitable spray gun (e.g. WIWO, Graco® or any other suitable). The choice of machine & gun depends largely on the type and size of work to be contemplated.

ECMACOAT FLEX PUR 20 should only be applied to properly prepared and primed substrates. Do not dilute ECMACOAT FLEX PUR 20, ECMACOAT PU PRIMER OR ECMACOAT 405 under any circumstances.

For best results, substrate and air temperature should be in a range 5-35°C. Before spraying, proper masking to be done to the surrounding areas to protect from overspray. Do not proceed with application if atmospheric relative humidity is >85% or if the surface temperature is <3°C above the dew point.

Normal recommended applied film thickness of ECMACOAT FLEX PUR 20 is 1.5 -2 mm for general purpose applications. However, higher thicknesses up to 3-4 mm can be used for demanding applications. 3.0 Kg/m<sup>2</sup> rate is the maximum coverage rate for a single coat application.

Consumption: approx. 1.0 kg/m<sup>2</sup>/mm, depending on the substrate. For estimation of quantity under practical project applications, allow some consideration for wastage during spray.

The applied membrane is sensitive to UV radiation, so discoloration is possible during exposure. If used under exposure conditions, cured membrane shall be protected with UV Stable Topcoat using ECMACOAT TC @ 0.2 Kg/ Sqm.

After application, it can be walked on after approximately 15 minutes; light foot traffic can be allowed after 24 hours, and full-service use is allowed after 3 days.

### Storage & Handling

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Material should be stored in Cool, Dry and covered shade at a temperature between 5°C–30°C, away from fire.

### Safety Precautions

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Wear all PPE's at the time of application like safety gloves, goggles and protective clothing. Avoid contact with the skin and eyes. In case of eye contact, immediately seek medical attention.

Avoid inhalation of the fumes. Respiratory protection must be worn when spraying or when in the vicinity of the spraying operation. When working in well ventilated areas, a combined char-coal filter and particle filter mask should be worn. When working in less well ventilated and in confined spaces, air-fed helmets should be worn by the crew. When working with the product do not eat, smoke or work near a naked flame.

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