

## DESCRIPTION

PU 110 is a single component, easily applied, polyurethane based, liquid waterproofing membranes. It creates an elastic and durable film layer by curing with the humidity in the air.

## TYPICAL APPLICATIONS

- Car parks,
- Irrigation channels,
- Asphalt membranes,
- Gypsum and cement panels,
- Exposed roofs,
- Indoor and outdoor applications,
- Terrace, veranda and balconies,
- Wet areas in indoor (bathroom, kitchen and etc.).

## FEATURES AND ADVANTAGES

- PU 110 is Certified according to ETAG 005, W3 category.
- Easy to apply (by brush, roller or spray).
- When applied it forms a one-piece layer that does not cause joint formation or leakage.
- Resistant to continuous water contact.
- Preserves its mechanical properties between -40°C and +90°C.
- It is permeable to water vapor. Having a breathable structure it does not cause accumulation in the substrate.
- When the material is damaged, it can be repaired easily and quickly with PU110.
- Excellent UV resistance.
- Excellent chemical resistance.

## CONCRETE SUBSTRATE STANDARDS

- Hardness: R28 = 15 Mpa
  - Humidity: W <10%
  - Temperature: + 5 °C and + 35 °C
  - Relative Humidity: <85%
- For detailed information, please consult our technical department.

## APPLICATION PROCEDURE

### • SURFACE PREPERATION

In order to ensure a good adhesion oil, grease, paraffin waste, cement grout, loose particles, mold release agents, cured old membranes should be removed from the surface before the application. The surface should be thoroughly dried after washing with high pressure water and should be free from damp. Surface defects and cracks should be repaired with suitable products.

### • PRIMING

For absorbent surfaces such as concrete, cement or screed, PU PRIMER 200 or EPOXY PRIMER should be used. AQUA PU PRIMER 2K or EPOXY PRIMER WB should be preferred on damp surfaces. TILE PRIMER should be used on non-absorbent surfaces such as metal, ceramic or old coatings. Please examine primer table for detailed information.

## • APPLICATION

Before using, the package should be opened and mixed with a low speed mixer for 2-3 minutes. For spray application, add CLEVER 001 at a maximum rate of 5% - 7%. The primed surface should be applied with a roller, squeegee or brush until the entire surface is covered, by pouring the product within minimum 2 layers. After the first layer is applied, the second layer should be applied minimum 6 hours and maximum 24 hours later. If the application has not been made within the specified time for the second layer, please consult the technical office of CLEVER POLYMERS for information and solutions before application. In order to increase the acceleration of the drying in cold weather, it is recommended to use ACC CATALYST if desired. Consult our technical department for thinning process.

### THE APPLICATION METHOD FOR W3 DURABILITY ACCORDING TO ETA-23/0032

1 Primer: Clever Epoxy Primer  
2 Waterproofing: CLEVER PU 110 as two layers  
3 Interlayer : White and 110 gr/m<sup>2</sup> felt  
After the surface is cleared from separator layers and mechanically wiped, EPOXY PRIMER is applied on it as 0.5-0.60 kg/m<sup>2</sup>. Before the epoxy primer gets dry, 0.3-0.7 mm silica sand is sprinkled on it. After 24 hours, the silica sand on the surface is cleared and PU 110 application starts. Before use, the package should be opened and mixed with a low speed mixer for 2-3 minutes. PU 110 is applied to the surface with a roller or squeegee as one coat and a 110 gr/m<sup>2</sup> white polyester felt is laid on the product before it gets dry, and a second coat of PU 110 should be applied on it again. In this system, the amount of PU 110 that should be used is min 2.0 kg/m<sup>2</sup>. Total system thickness should be 2.3 mm

## APPLICATION REMARKS

- It should be covered with PU 650 TC-1K or PU 600 TC-1K aliphatic flexible top coat material in order to extend the strength and shelf life of polyurethane based waterproofing products which are applied to areas exposed to open air conditions or pedestrian traffic.
- Not recommended for loose and unstable surfaces.
- It is not used for waterproofing of swimming pools with chemically treated water.

## CONSUMPTION

- First Layer (minimum): 0,70 - 0,90 kg/m<sup>2</sup>
- Second Layer (minimum): 0,70 - 0,90 kg/m<sup>2</sup>
- Airless Spray (for each layer): 0,75 - 0,90 kg/m<sup>2</sup>
- Total Consumption (minimum): 1,40 - 1,80 kg/m<sup>2</sup>

## CLEANING

After the application, all tools should be cleaned with CLEVER 001. Rollers and brushes should be disposed of.

## PACKAGING AND COLOR

It is white and grey in 5 kg and 25 kg metal buckets.

## STORAGE AND SHELF LIFE

The product can be stored for a maximum of 12 months in unopened original pail at temperatures between + 5°C and +25°C. Opened product should be used at the soonest.

## PRECAUTIONS

The product should be used in well ventilated environments. The product should not be in contact with open fires. Smoking should not be allowed during application. Protective gloves and masks should be used for hands and eyes during application. If the material comes into contact with eyes, it should be washed immediately with sufficient water. For more detailed information, ask for the Safety Data Sheet (MSDS) from CLEVER POLYMERS technical department.



## TECHNICAL DATA

| QUALIFICATION                                              | METHOD                              | FEATURE                                                      |
|------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Coating Type                                               | Clever Lab.                         | Single Component Polyurethane                                |
| Density                                                    | ASTM D 1475 / EN ISO 2811-1 (+20°C) | 1,40 ±0,05 gr/cm <sup>3</sup>                                |
| Viscosity                                                  | ASTM D4287 (+25°C)                  | 3000 - 6000 cp                                               |
| Flash Point                                                | ASTM D93                            | 35 °C                                                        |
| Water Vapor Permeability                                   | ASTM E96                            | 0,8 gr/m <sup>2</sup> hour                                   |
| Gloss                                                      | Clever Lab.                         | Semi-Gloss                                                   |
| Application Temperature                                    | Clever Lab.                         | +5°C to +35°C                                                |
| Shock Heat Resistance                                      | Clever Lab.                         | 200°C - Passed                                               |
| Solid Content                                              | Clever Lab.                         | %85 (±5)                                                     |
| Hardness                                                   | ASTM D2240, DIN 53505, EN ISO R868  | 60 (Shore A)                                                 |
| Elongation at Break                                        | ASTM D 412 (+23°C)                  | > %500                                                       |
| Tensile Strength                                           | ASTM D 412 (+23°C)                  | > 6 N/mm <sup>2</sup>                                        |
| Adhesion to Concrete                                       | TSE EN 1542 (+23°C)                 | > 2 N/mm <sup>2</sup>                                        |
| QUV                                                        | ASTM G53                            | 2000 hours - Passed                                          |
| Service Temperature                                        | Clever Lab.                         | -40°C to +90°C                                               |
| Tack Free Time                                             | 25°C / 55% RH                       | 4 hours                                                      |
| Recoat Time                                                | Clever Lab.                         | 6 to 24 Hours                                                |
| Hydrolysis (%8 KOH, 15 days at 50 °C)                      | Clever Lab.                         | No significant change observed in elastomeric characteristic |
| Hydrolysis (H <sub>2</sub> O, 30 days rotative, 60-100 °C) | Clever Lab.                         | No significant change observed in elastomeric characteristic |
| HCl (PH=2, 10 day at RT)                                   | Clever Lab.                         | No significant change observed in elastomeric characteristic |
| Hydrolysis (H <sub>2</sub> O, RT 100 °C 14 days rotative)  | Clever Lab.                         | No significant change observed in elastomeric characteristic |
| Thermal Resistance (100 days at 80 °C)                     | EOTA TR011                          | Passed                                                       |

\* Viscosity measured at + 25°C according to EN ISO 3219 standards. Viscosity increases inversely with temperature.

## CLASSIFICATION ACCORDING TO EOTA GUIDELINE (EUROPEAN ORGANISATION OF TECHNICAL APPROVAL)

| REQUIREMENT                   | PU 110        | PU 110        |
|-------------------------------|---------------|---------------|
| Minimum Expected Working Life | W3 (25 years) | W2 (10 years) |
| Climatic Zone                 | S (severe)    |               |
| Used Load                     | P1            | P3            |
| Roof Slope                    | S1-S4         |               |
| Minimum Surface Temperature   | TL3 (-20 °C)  |               |
| Maximum Surface Temperature   | TH4 (90 °C)   | TH3 (80 °C)   |
| Exposure To External Fire     | Broof (t1,t4) |               |
| Reaction To Fire              | Class E       |               |



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