

WHITECHEM PU MEMBRANE 450



Polyurethane Based, Single Component, UV Resistant, Waterproofing Membrane

1 – PRODUCT DESCRIPTION

WHITECHEM PU MEMBRANE 450 is a single component, UV resistant, solvent based, easy to apply, polyurethane based and elastic waterproofing material. After application, a waterproofing membrane is formed, which can be cured by the moisture on the surface and air, and which can install additional irregular and crack bridge. The waterproofing membrane maintains its performance even at low temperatures.

2 – PRODUCT FEATURES

- UV resistant
- Can be applied indoors and outdoors
- Easy to apply (brush, roller, airless gun)
- Excellent adhesion
- To be able to install a crack bridge (at least 2 mm)
- High elasticity
- Matte appearance
- Easy to repair
- Suitable for light foot traffic
- Water vapor permeability
- Resistant to perforation by plant roots
- Resistant to weather conditions (temperature, water and freezing)

3 – APPLICATION AREAS

- Waterproofing of all kinds of roofs, balconies and terraces with light foot traffic (in gross concrete, cement screed and plasters)
- Waterproofing of all kinds of ceramics, bathrooms, kitchens and other wet areas.
- Basic and curtain concrete waterproofing
- In green roof, landscaping and potted waterproofing
- On old ceramic waterproofing

- Protection and waterproofing on thermal insulation applications (PU foam, EPS, XPS etc.)
- In tunnel and bridge protection and waterproofing
- On glass, metal and wooden surfaces

4 - APPLICATION CONDITIONS

- The surface must be strong and with sufficient strength. Application should not be made on low screed concrete. The lowest compressive strength for the surface should be 25 MPa and the lowest bond strength should be 1,5 MPa.
- The concrete should be allowed to dry for at least 28 days before application on fresh concrete.
- The surface and ambient temperature should be at least 5 ° C and maximum 35 ° C.
- The maximum amount of moisture in the air should be 80%.
- The maximum amount of surface moisture should be 4% for the surfaces applied polyurethane primer (WHITECHEM PRIMER 90) or standard epoxy primer (**WHITECHEM PRIMER S80**), maximum 6% for surfaces applied moisture tolerant epoxy primer (**WHITECHEM PRIMER 80**), maximum 7% for surfaces applied water based epoxy primer (**WHITECHEM PRIMER W80**).
- Attention should be paid to condensation on the surface. Application should not be made early in the morning. The surface temperature should be at least 3 ° C higher than the dew point.
- Do not apply on frozen, melting surfaces or on surfaces where rain is expected within 6-8 hours.
- The above requirements apply to both primer and membrane application.

5 - SURFACE PREPARATION

- The application surface should be clean and dry, the elements that prevent adhesion should be cleaned from the surface. Do not wash to clean the surface.
- If necessary, the surface should be wiped off with suitable wiping machines in order to remove the weak concrete on the surface for to open the eyelets and openings. The glazed top layer of ceramic surfaces should be roughened. Dust happened after wiping should be removed from the surface by brush or vacuum cleaners.
- Dilatations on the surface should be insulated with the appropriate polyurethane based filler material (WHITECHEM PU DF 25) and dilatation tape.
- All kinds of cracks, gaps and segregations on the surface should be repaired with suitable epoxy or cement based repair mortars.
- Corner chamfers should be supported with appropriate repair mortar or chamfer tape.
- The application surface should be cut on the screed concrete in large places. Cutted joints must be filled with polyurethane based sealant (WHITECHEM WP 35).
- As a result of these processes, dust and debris on the surface should be removed from the surface for the last time.

6 - PRIMER APPLICATION

- For highly absorbent surfaces (concrete, wood etc.), one can choose between **WHITECHEM PRIMER 90**, **WHITECHEM PRIMER S80**, **WHITECHEM PRIMER 80** or **WHITECHEM PRIMER W80**.
- For bituminous surfaces, choose **WHITECHEM PRIMER W80**.
- For non-absorbent surfaces (ceramic, glass or metal), choose **WHITECHEM PRIMER S80**,

WHITECHEM PRIMER 80 or WHITECHEM PRIMER W80.

- For metal surfaces, choose **WHITECHEM PRIMER M80**.
- To obtain a homogeneous primer mixture, the primer should be mixed with an electric mixer for 3-4 minutes, low speed (~ 300 - 400 rpm) or with suitable equipment. Do not mix at high speed for a long time to prevent air bubbles.
- The prepared primer mixture is applied to the surface by brush, roller or airless spraying machines.

7 – MEMBRANE APPLICATION

- Before applying **WHITECHEM PU MEMBRANE 450**, make sure that the primed surface is sufficiently dry (at least 2-3 hours). The primed surface should not be too wet or completely dry. It is sufficient to leave a feeling of adhesion in your hand.
- Before applying the **WHITECHEM PU MEMBRANE 450** to the primed surface, it should be mixed with an electric mixer for 3-4 minutes, low speed (~ 300 - 400 rpm) or with suitable equipment to obtain a homogenous mixture. Do not mix at high speed for a long time to prevent air bubbles.
- The prepared mixture is applied to the surface by brush, roller or airless spraying machines.
- Surface cracks, cold joints, vertical-horizontal joints should be supported with polyester felt after the first layer application.
- It is recommended to cover the entire surface with polyester felt after first layer application in terrace and similar large area applications.
- Application thickness for single layer should be 0,60 mm maximum. At least 2 coats should be applied. It can be applied in 3 layers depending on the application. It is recommended to apply the floors in such a way that the application directions are perpendicular to each other.

- Waiting time between coats varies between 12-36 hours depending on temperature and humidity.
- In order to make the surface rough in application to be coated on the ceramic, before application of the top layer membrane, the surface is sprinkled with an average of 1,00 - 1,50 kg / m² quartz sand.

8 – TOPCOAT APPLICATION

- When the applied **WHITECHEM PU MEMBRANE 450** is in direct sunlight, color change can be observed after a certain period of time. However, this does not affect the physical properties and performance of the product.
- **WHITECHEM PU MAMBRANE T225** is applied as the topcoat when 100% color stability is desired.

9 – CONSUMPTION

System	Product	Consumption
Economic system	1 x WHITECHEM PRIMER 80 – W80 – 90	200-400 g/m ²
	1 x WHITECHEM PRIMER M80	70-100 g/m ²
	2 x WHITECHEM PU MEMBRANE 450	500-700g/m ² /layer
Standard system	1 x WHITECHEM PRIMER 80 – W80 - 90	200-400 g/m ²
	1 x WHITECHEM PRIMER M80	70-100 g/m ²
	3 x WHITECHEM PU MEMBRANE 450	500-700g/m ² /layer
Topcoat applied system	1 x WHITECHEM PRIMER 80 – W80 – 90	200-400 g/m ²
	1 x WHITECHEM PRIMER M80	70-100 g/m ²
	2 x WHITECHEM PU MEMBRANE 450	500-700 g/m ² /layer
	1 x WHITECHEM PU MEMBRANE T225	500-700 g/m ² /layer

* Consumption in the table is theoretical. Consumption may vary according to surface permeability, weather conditions, and the technique of application.

Test Name	Result	Test Method
Chemical structure	Solvent Polyurethane	
Density	1.35 ± 0.03 gr/ml (23°C ve %50 R.H.)	(ASTM D 1875)
Appearance / Color	Liquid / White and Grey	
Solid Content	Weight ~ 84%	
Viscosity	5000 - 10000 cps	
Shell Bonding Time	~ 3 hour (23°C ve %50 R.H.)	
Rain Stability Time	~ 7-8 hour (23°C ve %50 R.H.)	
Light Pedestrian Time *	~ 24 saat (23°C ve %50 R.H.)	
Full Curing Time	~ 7 day (23°C ve %50 R.H.)	
Hardness (Shore A)	60 ± 5	(ASTM D 2240)
Elongation	≥ % 450	(DIN 53504)
Tensile strength	~ 3 N/mm ²	(DIN 53504)
Service Temperature	Between -20 °C and +80 °C	
Capillary water absorption and water permeability	0,011kg/m ² .h ^{0,5}	(EN 1062-3)
Adhesion strength through the pull-out test	>1,2 N/mm ²	(EN 1542)
Abrasion resistance	Average 400 mg	TS 8103 EN ISO 5470-1
Fire Response Class	F	EN 13501-1

* It is not for continuous pedestrian traffic, only for the examination or for the application of the next floor.

10 – TECHNICAL SPECIFICATIONS

11. CHEMICAL STRUCTURE TABLE

Chemical Name	RESISTANCE	Chemical Name	RESISTANCE
Hydrochloric Acid% 10	±	Methanol	±
Hydrochloric Acid 20%	±	Ethyl Acetate	-
Sulfuric Acid 10%	-	Trichlorethylene	±
Sulfuric Acid 50%	-	Toluene	±
Sulfuric Acid 50%	-	Potassium Hydroxide 20%	+
Nitric Acid 10%	±	Potassium Chlorite 25%	+
Acetic Acid 5%	±	Ammonia 25%	+
Lactic Acid 10%	-	Hydrogen Peroxide 3%	+
Lactic Acid 10%	-	Sodium Chloride 25%	+
Phosphoric Acid 10%	+	Iron Sulfate 5%	±
Phosphoric Acid 30%	±	Diesel	+
Citric Acid 10%	+	Unleaded Gasoline, 98 octane	±
Formic Acid% 1	±	Engine oil	+
Ethanol	±		

+ Resistant

± Resistant (color, brightness and hardness may change.) Rarely in case of contact or splash,

- Not Resistant

12 - PACKAGING

- 20 kg metal bucket

13 - COLOR VARIETIES

- White and gray (other colors can be produced for tonnage orders)

14 - SHELF LIFE AND STORAGE CONDITIONS

- It is suitable for 9 months from the date of production when stored correctly between +5 ° C and +30 ° C in original, unopened and undamaged packages.
- Products should be stored in dry and places where not having direct sunlight.

15 - WARNING AND SUGGESTIONS

- Personal protective equipment must be used during application. In case of contact with skin, wash with plenty of water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

- Keep products away from sources of ignition. Do not heat the products by sun or other means. Do not smoke at the time of application.
- There must be sufficient air circulation in the application area.
- Opened buckets should be consumed in a short time.
- It is not recommended to be used in pools such as pools, ornamental ponds or wastewater facilities that will be permanently submerged.
- In order to minimize the bubble formation in the membrane, application should not be made thicker than the maximum application thickness in one coat.
- The finished product should be protected against rain and mechanical stress until it is dry.
- Clean all tools and application equipment with thinner immediately after use. Hardened / cured material can only be cleaned by mechanical methods.