

# Chelfix Polyurea 450 Hybrid

Fast Setting, Hybrid Polyurea, Waterproof Membrane System

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## Product Description

Chelfix Polyurea 450 Hybrid is a fast curing, hybrid Polyurea system, which has a feature of crack bridging, has designed as a waterproofing membrane. This solvent-free, Hybrid polyurea consists of two components and can be applied for concrete and steel in a wide range of environmental conditions because of its rapid curing chemical structure.

## Areas of Application

- Below grade waterproofing.
- Terrace, roof, balcony and stream gutter.
- Flower tub insulation.
- Concrete and masonry block walls.
- Tank coating.
- Roof waterproofing
- Foundation wall water insulation.
- On reinforced concrete and sheet metal plate.
- Waste water tank lining.
- Marine environments and aquarium lining.
- Landscape & water containment.
- Hangars, swimming pools, water parks/theme parks, auto park insulation, underground water tanks, and the places that need water insulation and coating.
- For UV resistance, it is applied with Chelfix PU6000.
- Can be applied under the asphalt. It withstands temperatures up to 160 degrees within the specified time limits. Please contact CHELFIX for technical details.
- Shock Heat at Sudden Duration: 180°C - passed. It is recommended to use a protective product between asphalt and polyurea.



## Advantages

- VOC free, 100% solid and no solvents .
- It has high crack bridge feature.
- Keeps its elasticity even at low temperatures.
- It provides excellent adhesion and has chemical and mechanical strength.
- Excellent impact, abrasion and puncture resistance.
- It provides a seamless application due to its one-component and high flexibility feature.

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- It shows high resistance to water ponding.
- It is resistant to salts, bases, diluted acids, and diluted sulfates.
- Environmentally friendly.
- Seamless and monolithic, including field joints.
- Variable application thickness.
- Low permeability values.

### Technical Data

Property:	
<b>General Information</b>	
Chemical Structure	Hybrid polyurea
Appearance	Grey
Density (Kg/lit)	Component A : 1.15 gr/cm <sup>3</sup> Component B : 0.98 gr/cm <sup>3</sup>
<b>Application Information</b>	
Consumption	1.0 – 1.10 Kg/m <sup>2</sup> (for 1mm film thickness)
Viscosity	Component A: 800 ±200 mPas Component B: 1000 ±200 mPas
Solid Content	100%
<b>Performance Information</b>	
Adhesion Strength to the Concrete	>2 N/mm <sup>2</sup> TS EN 4624
Adhesion Strength to the Metal	>1.5 N/mm <sup>2</sup>
Tensile Strength	>7 N/mm <sup>2</sup> DIN 53504
Tear Strength	> 25
Breaking Strain	>400% DIN 53504
Humidity Tolerance	5 %
Soil Temperature of the Surface	-5 °C / +40 °C
Service Temperature	-40 °C / + 120 °C
All these technical data are approximate values obtained from the laboratory study of Chelfix Construction Chemicals for finished products obtained at +20°C (±2) air temperature and 50% relative air humidity and valid for its performance after 28 days.	

### Application Instructions

**Surface Quality:** Surfaces should be clean, smooth, strong, free of any kind of dust, oil, dirt, rust, mold oil, detergent, and similar anti-sticking materials. If there is segregation in concrete, defective and loose parts should be discarded and weak parts should be removed. If there is any crack or cavity on the floor or wall, it should be repaired with appropriate Chelfix R300 repair mortars. The Chelfix Polyurea 450 Hybrid application must be started at least 7 days later.

**Surface Preparation:** If there is a dilatation, the dilatation should be isolated using the Chelfix Tapes and Chelfix Bond 405D before the application of Chelfix Polyurea 450 Hybrid. The isolation of dilatations is more difficult and costs more when you do it later. All drain around

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and grooves should be insulated by using filters and Pah Taps (chamfering bands). The surface which will be insulated must be dry. If there is any ponding or puddle, it should be removed.

### Priming

As a primer, for the concrete surface, the two-component, epoxy-based Chelfix EP450 should be applied with a brush or a roller between 200-400 gr/m<sup>2</sup> (for one layer). Lightly spreading out with quartz sand 0.3-0.8 mm is recommended because this provides higher adhesion values and extends the maximum waiting time of primer prior to the application of polyurea coating. In order to avoid the formation of blisters do not spread to excess. Liner consumption varies according to the quality and absorbency of the concrete. Before application of Chelfix Polyurea 450 Hybrid, at least 4 hours and maximum 24 hours should be waited.

### Polyurea Application

Chelfix Polyurea 450 Hybrid can be applied on primed surfaces by spraying with the suitable equipment. As it does not have UV resistance, it should be covered with Chelfix PU6000, heat insulation boards, protective plates or geotextile felt, etc. after the application. The polyurea must be applied within 12-24 hours of applying the primer. Component A and component B must be applied using a two-component high pressure and heat spray machine. The machine should be able to spray the components in a 1:1 volume ratio. Both components must be heated above 70°C. In order to achieve good performance, the temperature and pressure should stay the same during the application and must be controlled regularly. Polyurea system components must not be diluted under any circumstances. Before application, component A must be stirred at least 30 minutes using a barrel mixer until a homogenous mixture and color is obtained. If color stability is required, an aliphatic top coat must be applied within 12 hours of applying Chelfix PU6000.

### Consumption of Coating Components

Primer: 0.20- 0.40 Kg /m<sup>2</sup> .

Quartz Sand: 1 - 1.5 Kg /m<sup>2</sup>.

Polyurea Coating: 1.0- 1.10 Kg/m<sup>2</sup> /mm (recommended film thickness is minimum 2.0 mm).

### Application Conditions/ Limitations

	Surface Temperature	Ambient Temperature	Relative Aair Humidity
Optimum	5 – 30 °C	20 – 30 °C	25 – 50 %
Minimum	0 °C	0 °C	0 %
Maximum	50 °C	50 °C	85 %

### Process Properties

	Unit	Data
Mix Ratio	By Volume	A100 B 100
	By Weighth	A100 B 100

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Process Temperature (°C)	°C	A 70-80	B 70-80
Process Pressure (bar)	Bar	A 180-200	B 180-200

## Application Notes/ Restrictions

- Foreign material should not be added.
- The product is ready to use, and it should not be diluted.
- Should not be applied in a rainy weather while it is raining.
- Newly applied material/ place, must be protected against weather conditions.

## Packaging

Chelfix Polyurea 450 Hybrid is available in 420 Kg/set (200 Kg A +220 Kg B).

## Shelf Life

Chelfix Polyurea 450 Hybrid has shelf life of 12 months in unopened package in dry environment.