

Polyurea

General Description

Polyurea is of the newest technologies in coating and flooring industries. Though Polyurea is known as modified Polyurethane and have some similar properties, Polyurea technology is a unique technology.

Polyurea has a very short drying time (less than 30 seconds) and unlike Polyurethane, it does not need a catalyst to react. This short drying time is valid through a wide range of temperatures and is also moisture-independent. But if adhesion to substrate is important the moisture of the surface should be considered in order to obtain good adhesion. For this purpose, suitable raw material should be used for two-component Polyurea.

Polyurea has impressive properties such as moisture resistant, high chemical resistant, high tensile strength, and high energy damping that has made it possible for application in various usages. The composite of Polyurea with Kevlar, Glass, and Carbon Nano Tube fiber enhances the tensile and flexural strength.

Polyurea is used for:

- Retrofit of under stress structures
- High chemical resistant for oil, gas, and petrochemical industries and sewer pipes
- Sealing of reservoirs and etc.
- Blast mitigation
- Flooring and heavy traffic industries
- Anti-corrosion for metals
- Caulking
- Outdoor flooring because of its UV resistance
- High adhesion to cement, plastic, and metal surfaces

Unlike Epoxy flooring, Polyurea has a high tolerance for UV and is also very elastic, so it prevents crack growth.

Composition

Aliphatic/Aromatic Isocyanate, Polyetheramine, Polyether polyol, Colorants, Active diluent, and fillers.

Properties

- High adhesion to concrete, plastic, and metal surfaces
- Good chemical resistance
- High mechanical strength
- Solvent free and environment friendly
- High durability
- Good appearance
- Available as thermal insulator
- UV resistant

- Fast drying

Technical Data

Base	Aliphatic/Aromatic Isocyanate, Polyetheramine
Density	Part A: 0.56 gr/cm ³ Part B: 0.52 gr/cm ³ Overall: 1.12 gr/cm ³
Viscosity	Part A: 800 cps Part B: 600 cps
Hardness (Shore A)	87-93
Hardness (Shore D)	40-46
Tensile Strength	27.5 MPa
Abrasion Strength	<15 mg
Elongation	700%
Solid by Volume	100%
Solid by Weight	100%
Mix Ratio by Weight (A:B)	1:1
Touch Dry	3-7 S
Dry to Handle	10-22 S
Fully Cured	7 Days
Recoat Interval	15 Mins - 12 Hrs
Application Temperature	-30°C - +70 °C

Conditions of Application

Apply only to clean, dry and sound substrates that are free of all coatings, sealers, curing compounds, oils, greases, or any other contaminants.

- New concrete should be cured a minimum of 28 days.
- Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.
- Remove any laitance or weak surface layers.
- Metal substrates should be blasted to nearly white and have suitable surface roughness

Application

It is only applied by appropriate two-component airless spray.