

STANDARD PURE POLYUREA

Product Description:

ARMOR Standard Pure Polyurea, is a very fast set, 2-component, 100% solid flexible coating derived from a reaction of an isocyanate prepolymer and an amine terminated resin blend. This general purpose aromatic pure polyurea has been especially designed to protect and coat concrete, metal, wood, ceramic, geotextile surfaces. The product reacts within seconds and once cured, leaves a flexible, durable, tough surface. Its extremely fast gel time makes it suitable for applications down to -20 °C without special conditioning of the component resins and isocyanates. It is relatively moisture and temperature insensitive, allowing application in the most problematic ambient conditions. The material must be applied utilizing high pressure, heated plural component spray proportioning equipment.

Features:

- 100% solid, VOC free, no solvents
- No catalyst
- Fast reactivity and fast return to service time
- Seamless and jointless coating
- Little or no odor
- Excellent thermal stability
- Water resistant
- Excellent adhesion on concrete, steel, aluminum, plastics, fibers, wood, foam etc.
- Excellent flexibility on sensitivity to temperature and humidity
- Excellent chemical resistance
- Excellent impact and abrasion resistance
- Anti-corrosive
- Very good tensile and structural strength
- UV, chlorine and saltwater resistant
- High application thickness possible
- Variable application thickness possible
- Broad color spectrum

Application Areas:

- General water isolation –water tanks, pools, swimming pools, ponds, water pipes, membranes, waste water treatments, manholes, sewer -lining , roofs
- Floors –industrial floors, hospitals, factory, auto parks, garage
- Truck bed liners
- Construction – roads, bridges, railways, high speed railways, tunnels, airports
- Marine industry
- High abrasion applications –oil and gas industry, refineries, pipelines, petrochemical industry, mining, secondary containment, energy industry
- Leisure industry- water parks, aquariums, play grounds, decorative applications

Instructions:

- Surface preparation strongly affects coating performance. Concrete substrates must be prepared mechanically using abrasive blast cleaning to remove cement laitance and achieve an open textured surface. Weak concrete must be removed and surface defects such as voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products. The application surface has to be primed in order to achieve an even surface and good adhesion.
- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum. For application pull off strength of the surface should be min. 1.5 N/mm² and concrete residual moisture should be max. 6 %.
- Isocyanate prepolymer and amine resin must be applied using a 2-component high pressure spray machine.
- Amine component must be stirred using a barrel mixer.

Storage and Shelf Life:

Polyurea components are sensitive to moisture. Keep polyurea components in closed containers. Store the product in a ventilated place away from direct exposure to sunlight. Keep polyurea components between 20 -30 °C for quality reasons. Shelf life of the unopened original packaging is nine months from manufacturing date.

Safety and Disposal:

Contains isocyanate MDI. Avoid breathing vapors. Avoid contact with skin and eyes. Take precautions during application. Wear suitable protective clothing, gloves and eye/ face protection. Adequate ventilation of the working area is recommended.

Consult SDS for further information.

Restrictions:

Aromatic polyurea coating systems are UV-stable but are not color stable. The cured coating system may exhibit discoloration when exposed to sunlight. This does not influence the physical properties of the material.

Technical Features:

COMPONENT PROPERTIES

	Unit	Method	MDI Prepolymer (A)	Amine Resin (B)
Density (25°C)	g/cm ³	ASTM D 1217	1.11±0.03	1.02±0.02
Viscosity (25°C)	mPa.s	ASTM D 4878	700-800	300-600
Shelf life	months	-----	9	9

PROCESS PROPERTIES

	Unit	Data
Mix Ratio	By volume	A=100 B=100
	By weight	A= 112 B= 100
Application Temperature	°C	A: 70-80 B: 70-80
Process pressure (bar)	Bar	A: 150-200 B: 150-200

PHYSICAL PROPERTIES

	Method	Datas
Chemical structure		A: MDI Prepolymer
		B: Amine Resin
VOC content (%)	ASTM D-1259	0
Solid content (%)	ASTM D-2697	100
Gel time (sec)	--	5-10
Tack free time (sec)	--	15-25
Recoat time (hr)		0-6
Density (g/cm³)	ASTM D-792	0.99-1.03
Tensile strength (MPa)	ASTM D638	≥ 18
Modulus (MPa)	ASTM D638	100 % elongation ≥10
		300 %elongation ≥15
Elongation (%)	ASTM D638	≥350

Hardness (Shore D)	ASTM D2240	40-45
Hardness (Shore A)	ASTM D2240	85-90
Tear strength (N/mm²)	ASTM D 624	50-55
Taber abrasion (mg)	ASTM D 4060	<78 1000 cycles
Pull off strength (N/mm²)	ASTM D 4541	concrete: ≥2 steel : ≥6
Fire resistance class	EN ISO 11925-2	E
Water vapor transmission rate (g*mm/m²*24 hr)	ISO 15106-3	17
Methane transmission rate (cm³*mm/m²*24 hr)	ISO 15105-1	70



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