

Pure aromatic polyurea modified specifically for use with potable water

PRODUCT DESCRIPTION

PlekoProof URP-PW is a pure aromatic polyurea designed for coating substrates that store and transmit potable drinking water. It is approved under ANSI/NSF 61 and meets the US FDA global migration standard (21 CFR 175 – 300).

This fast-setting, 100% solids, plural component product is suitable for concrete, steel, and other surfaces as a waterproofing membrane and an anti-corrosion and abrasion-resistant liner. It offers excellent chemical resistance, thermal stability, and UV resistance. PlekoProof URP-PW can be applied by spray in one or multiple layers to form a tough, flexible membrane.

USES AND APPLICATIONS

- Potable and drinking water tanks, reservoirs and pipelines
- Concrete and steel water storage tanks
- Desalination and water treatment plants
- Catering facilities, food processing plants, food preparation areas
- Dairies and livestock farming facilities
- Cold storage facilities and refrigerated vehicles
- Pharmaceutical, sterile and clean - room areas
- Aquariums, ponds, aqueducts and reservoirs
- Underground waterproofing

FEATURES & BENEFITS

- ANSI/NSF/CAN 61 approved for potable water @ 60°C
- Meets global migration standard US – FDA: 21 CFR 175 – 300
- 100% solids with zero VOC
- Fast reactivity and cure time resulting in almost immediate return-to-service time
- Performs in constant process temperatures from -40 °C to 120 °C
- Maintains high physical properties on weathering
- Superior elongation and tear properties
- Seamless, resilient, flexible and durable
- Excellent corrosion protection
- High impact and abrasion resistance
- Continuous thermal stability
- Resistant to many solvents, acids and alkalis (consult NCSI)
- Low permeability waterproofing membrane

COLORS

Standard grey and sky blue are available.

Custom colors can match any RAL number upon request, with a minimum order required.

PACKAGING

404-kg drum sets, shipped in metal drums of 212 kg of side A and 192 kg of side B

DESIGN CRITERIA

PlekoProof URP-PW can be applied at any rate to achieve the desired thickness, starting with a minimum of 1000 microns and with no maximum limit.

PROPERTIES

PRODUCT DATASHEET

PlekoProof URP-PW



Consumption rate (approx.)	1.0 kg/m ² @ 1mm	
Solids by volume	100%	ASTM D 2697
Volatile organic compounds	0 gm/ ltr	ASTM D 2369
Density	Part A: 1.12 kg/ ltr , Part B : 1.01 kg/ ltr	ASTM D 792
Viscosity CPS @ 27°C	Part A : 450-850, Part B : 250-550	ASTM D 4878
Minimum application thickness	1000 microns	
Tensile strength	20 ± 2 MPa	ASTM D 412-C
Tear strength	70 ± 5 kN/m	ASTM D 624
Elongation	450-550 %	ASTM D 412-C
Hardness	45 to 55 Shore D	ASTM D 2240
Flexibility (2mm mandrel)	Pass	ASTM D 522
Water vapor transmission rate	0.2 to 0.3gms/hr-m ²	ASTM E96
Water vapor permeability	0.361 perm-inch	ASTM E96
Water absorption -24 hours	~1%	ASTM D 570
Low Temperature Crack Bridging	Pass	ASTM C1305
Impact Resistance (No Holidays)	> 20 J (N-m)	ASTM G14
Fire Rating	Meets Class A for Flame spread	ASTM E108
Flash point Pensky Martin	> 93 °C	
Service temperature	Dry : -40 °C to 120 °C , Wet : 4 °C to 60 °C	
Abrasion Resistance weight loss	< 8 mg loss Taber CS 17wheel 1 kg/1000 rev	ASTM D 4060

PROCESSING PROPERTIES (Under standard lab conditions)

- Mix Ratio : 1:1 by volume
- Gel time : 3 to 20 seconds
- Tack free time (DFT & Temperature dependent) : 30 to 60 seconds
- Post cure time : 24 hours

Properties and values are directly influenced by equipment, spray gun, mix chamber temperature, pressure, and related parameters, leading to expected variations.

CHEMICAL RESISTANCE

Pleko product formulations have varying resistance levels to specific chemicals. For detailed resistance information, consult the chemical immersion test data in the PlekoTest Book. Keep in mind that chemical concentrations are complex, and this complexity increases with higher temperatures. For specific recommendations on chemical resistance, contact Pleko Technical Personnel before specifying these products. For further details on product and chemical resistance, reach out to NCSI. Below is a chart of the results for Polyurea in chemical spill tests, conducted per modified ASTM D 3912.

- Hydrochloric acid upto 10% : **R**
- Ammonium Hydroxide 20% : **R**
- Sulphuric Acid 15% : **R**
- Ammonium Hydroxide 50% : **RC**
- Phosphoric Acid 10% : **R**
- Potassium hydroxide 10% : **R**
- Acetic Acid 10% : **R**
- Potassium hydroxide 20% : **RC**
- Sea water : **R**
- Sodium Hydroxide 20% : **RC**
- Waste Water : **R**
- Deionised Water : **R**
- Water @ 176 °F (80 °C) : **R**
- Diesel Fuel, Gasoline (unleaded) : **R**
- Hydrogen Sulphide (gas) : **R**
- Gasoline Unleaded : **R**
- Motor Oil, Brake Fluid : **RC**
- Sodium Hydroxide-50% : **RC**
- Hydraulic Oil : **R**

R = Resistant RC = Slight surface change or discolouration with no loss of hardness

INSTALLATION

SUBSTRATE PREPARATION

Concrete:

Ensure the concrete subfloor is dry, smooth, structurally sound, and free of depressions, scaling, and foreign materials. Remove all curing compounds. Use abrasive, sweep, or water blasting to get rid of latent material and expose voids. Fill voids and repair spalls with high-quality epoxy filler or mortar. Prime and fill imperfections to reduce out-gassing. Test all concrete substrates for moisture content. Install a moisture barrier on on-grade or below-grade concrete floors or slabs to protect against ground moisture. Surface preparation must meet Joint NACE 6/SSPC-SP 13 standards and achieve a concrete surface profile (CSP) of CSP 3 to CSP 6, as per ICRI Guideline No. 03732.

Steel:

Clean all steel surfaces thoroughly to remove contaminants. Assess and treat surfaces according to ISO 8504. Achieve minimum cleanliness with abrasive blasting to NACE-2/SSPC SP-10/Sa 2.5, per ISO 8501-1, with an anchor profile of 3 to 4 mils (75–100 microns). Remove soluble salts to acceptable levels.

For longer coating performance without oxidation, use the Premera CW* range. If abrasive blasting is not an option due to spark risks, clean with Premera CW-VB*.

***Check the Technical Data Sheets for product details.**

****Refer to the NCSI surface preparation manual for specific procedures for different substrates.****

MIXING

PlekoProof URP-PW must not be diluted. Mix Part B resin thoroughly using air-driven equipment until the mixture is uniform in color. Always use dedicated spray equipment.

APPLICATION

Use high-pressure, heated plural component 1:1 spray equipment like Graco Reactor to apply materials consistently without pressure loss or temperature drop over the hose length. Precondition both Part-A and Part-B materials to 26-33°C before application. Ensure the surface temperature is at least 3°C above the dew point. Spray both materials at a minimum of 2000 psi and above 70°C, maintaining adequate pressure and temperature throughout the process.

For best results, abrasive blast the substrate. Concrete should cure for at least 28 days, and PlekoProof URP-PW should be applied over a suitable primer for maximum adhesion. On horizontal surfaces, apply a texture “stipple” coat after reaching the desired film thickness for non-skid purposes. Recommended dry film thickness (DFT) depends on specific functionality and exposure requirements, so consult with Pleko technicians for your design.

Spray PlekoProof URP-PW in smooth, multidirectional passes for a uniform thickness. Apply subsequent layers within the over-coating time window; if exceeded, activate the previous layer with Pleko Premera AE T7/AE T7 LF.

Refer to the Technical Data Sheets for more details.

LIMITATIONS

Store in a sealed container after opening and do not open until ready to use. It is highly recommended to add a nitrogen blanket for the 'A' component after opening.

PlekoProof URP-PW may yellow or darken due to its aromatic composition and can become flat with UV light exposure. You can apply a topcoat within six hours using an aliphatic polyurethane/polyurea coating for a durable, colorfast finish.

EQUIPMENT CLEAN UP

Cured products can be disposed of without restrictions. Uncured isocyanate and resin must be mixed and disposed of according to local regulations. Dispose of containers following local environmental laws.

STORAGE

Store unopened drums for twelve to eighteen months on pallets, away from extreme heat, freezing, and moisture. Use drum heaters to lower material viscosity in cold temperatures.

HEALTH AND SAFETY

This product contains Isocyanate and curatives

Attention

This product is intended for use by qualified professional contractors, as a component of a larger construction system and specification. It should be installed in accordance with given instructions and specifications. Information listed above reflects the criteria for our internal quality test and practical experience. Results depend on listed instructions and consumer skills and are therefore out of our responsibility whether expressed or implied. All values are valid for the product when dispatched from the plant. We reserve the right to change any given specification without notice.