KRYPTON - ProLine AB95P

Pure Polyurea for industrial applications – Abrasion and Impact.

DESCRIPTION

ProLine AB95P is formulated using 100% pure polyurea technology to produce an extremely hard wearing seamless protective lining that exhibits excellent abrasion and impact resistance. Spray applied to any thickness in one application, even in challenging environmental circumstances its instant curing features result in a very rapid return to service for industry.

APPLICATIONS

- Mining equipment.
- Separator tanks.
- Pipe linings, culvert linings.
- Slurry and processing tanks
- Bulk material storage and handling.
- Bins, hoppers, chutes
- Train carriage linings
- Conveyor belt repairs.
- Truck linings

FEATURES

- Spray applied to any thickness in one application and instant curing – rapid return to service.
- 100% Pure Polyurea. Can be applied in high moisture / humidity environments.
- Seamless – no joins or welds.
- High abrasion and excellent impact resistance.
- Excellent elongation and high tensile strength.
- Maintains physical characteristics through a wide temperature range -40C - +120C
- Can be easily and quickly repaired.
- Can incorporate wear indicator zones for planned maintenance.
- Good chemical resistance.

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Polyamine	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Packaging **Note:** Product pigment is delivered in a third container.	Metal container 196 kg Component C (Color paste) Metal container 4 kg	Metal container 220 kg
Non-volatile content (%)	Approx 100%	100%
Flash point	>100ºC	>100ºC
Color	Yellow (without pigmentation)	Yellowish
Density	Temp (ºC): 25 — Density (g/cm³): 1.01	Temp (ºC): 25 — Viscosity (g/cm³): 1.12

Viscosity approximate Brookfield	Temp (ºC)	Viscosity (mPa.s)	Temp (ºC)	Viscosity (mPa.s)
	25	440	25	425
Colour	Dark yellow. Component A is pigmented by addition of pigment paste (Pigment Spray) delivered with each kit of product			
Gel time	6 - 8 s at 25ºC 4-5 s at 60ºC Tack free time 30 s			
Storage	Keep between 10º and 30ºC.			
Approx shelf life	12 months from manufacture.			

INFORMATION ON THE FINAL PRODUCT

Final state	Elastomeric 100% solids membrane
Hardness (Shore)	95A (± 5)
Mechanical properties	Elongation at break: 300 - 350% Tensile strength: 17 MPa (EN-ISO 527-3)
Tear strength	69 N/mm (ISO 34-1, method B)

Adhesion strength

Substrate	Adhesion strength (MPa)
Concrete (with epoxy primer)	4.0
Steel (PU Primer)	≥ 8

Chemical resistance

Immersion test, 80ºC, 7 days (0 = no resistance, 5 = good resistance)

Chemical	Conditions	Result
Water	15d, 80ºC	5
Salt water (saturation)	15d, 80ºC	5
Xylene	7d, 80ºC	2
Ethyl acetate	7d, 80ºC	1
Isopropyl alcohol	7d, 80ºC	0
Sodium hydroxide (50%)	7d, 80ºC	5
Hydrogen peroxide (33%)	7d, 25ºC	4
Sulphuric acid (10%)	7d, 80ºC	5
Sulphuric acid (30%)	30d, 80ºC	4
Phosphoric acid (54%)	7d, 80ºC	4
Bleach	7d, 80ºC	4
Ammonia	7d, 80ºC	5
Diesel	16d, 80ºC	5
Hydrochloric acid 12M (37%)	7d, 80ºC	0
Hydrochloric acid 6M (18%)	7d, 80ºC	1
Hydrochloric acid 3M (9%)	7d, 80ºC	4
Hydrochloric acid 0.75M (2%)	7d, 80ºC	5
Sodium hypochlorite (2%)	7d, 80ºC	3
Engine oil (1%)	7d, 80ºC	5
Crude petroleum	21d, 23ºC	5
Sulfamic acid	7d, 60ºC	4
Oleic acid glycerine	7d, 80ºC	0
Ethanol/water 20/80 w/w	7d, 80ºC	5
urea	7d, 80ºC	4
Ammonium nitrate	24d, 60ºC	5

UV resistance	ProLine AB95P is an aliphatic isocyanate based resin. It will exhibit colour shift under UV exposure however this will not affect the physical characteristics.

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Abrasion resistance	13 mg (Taber, C17 wheel, 1000 grams, 1000 rev)
Thermal resistance	Stable up to 180ºC.

SUBSTRATE REQUIREMENTS

The substrate must be free of contaminants (fats, oils and silicones), dust and loose materials. Irregularities pointed or protruding from the surface should be eliminated.

In the case of concrete it must be totally cured and free of any laitance. Ideally a concrete substrate must be completely dry, in this case it will be primed with the Epoxy 100 or Epoxy Gel Primer. Epoxy Gel primer is recommended on vertical surfaces. If the concrete substrate has a humidity level higher than 4%, it should be primed with the Primer GC.

Steel surfaces should be prepared with a class 2 ½ blast with a surface profile of approximately 80 microns.

For specific application methodologies consult with the Krypton Technical team.

RECOMMENDED ENVIRONMENTAL CONDITIONS

The temperature of the substrate should be between 5ºC and 40ºC. In all cases substrates should be 3ºC above dew point before applying primers or membranes.

MIXING

Add the required Pigment to the A-component and thoroughly power stir before using and periodically during spraying operations. It is recommended to pre-heat both components by recirculating both components through the spray machine with the heaters set at recommended settings.

APPLICATION GUIDELINES

➢ ***ProLine AB95P*** can only be applied using high pressure heated plural component spray equipment by trained and experienced applicators.
➢ In ambient temperatures below 20C chemical drums should be pre-heated using band heaters to 30 – 40° C.
➢ The A-side component should be thoroughly power stirred prior to the commencement of spraying and periodically during the spraying process to ensure there is no settling out of the A-side chemical components.
➢ The Pigment is always mixed into the A-side using a ***power stirrer***.
➢ Both the A-side and B-side drums should be fitted with desiccant dryers.
➢ Compressed air supply should be supplied via an air dryer.
➢ Primary heaters should be set at between 65-70°C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances.
➢ It is important to ensure sufficient heat is maintained. Failure to maintain sufficient heat can compromise the mix and final physical properties of the coating.
➢ Hose heaters should be set at 70 ° C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances.
➢ For best results ensure spray pressure (not static pressure) is a minimum of 155 bar (approximately 2250 psi)
➢ For full substrate preparation and / or repair procedures consult with your Krypton Technical representative

Contact Krypton Chemical for more detailed technical information.

CURING TIME

Approximate hardness values are provided as reference only (2 mm, polypropylene substrate, 20ºC 50% RH)

Time	Shore A (± 5)
5 min	28
10 min	40
20 min	55
1 hour	70
24 hours	80
4 days	95

REAPPLICATION

Usually, not necessary as desired thickness can be obtained in one single application. In the event additional thickness is required apply additional material within 2 hours of original coating application.

Ensure primer is cured but still within the overcoat window before applying ProLine AB95P.

For repairs or overcoating existing Krypton linings consult with the Krypton Technical Team.

RETURN TO SERVICE

Under most conditions (25ºC, 50% rh), the membrane is resistant to light pedestrian traffic in 1 hour. After 1 day, more than 90% of the final properties are reached.

TOOL CLEANING

Solvent use for machine component cleaning is discouraged. A cleaning plasticizer fluid like Rayston Fluid is suitable. Component B must be completely removed from all air-exposed parts and replaced with this cleaning fluid

FAQ

Problem	Question	Cause	Solution
Does not cure or remains sticky	AB ratio is correct?	Pressure differences	Check and correct pumping equipment
Bubbles or open pores	Porous substrate?	No primer	Apply an Epoxy type primer before Polyurea
Not enough hiding power	Horizontal?	Too few	Use 2 kg/m^2 minimum
		No pigment	Thoroughly mix pigment in component A before spraying

PRESERVATION AND MAINTENANCE OF THE PRODUCT

An inspection and maintenance program should be followed relevant to the application.

SAFETY

Component B contains isocyanates. Always follow the safety instructions in the Material Safety Data Sheet. Respiratory protection is mandatory (combined organic vapor filters + particles) along with protective clothing. This product must be used only for the applications here described. This product is intended for industrial and professional use only.

DISPOSAL

Empty containers must be handled with the same precautions as if they were full. Treat empty containers as hazardous waste and transfer them to an authorized waste manager. If the containers still have some material left, do not mix with other product to avoid potentially dangerous reactions. Component A and B may be mixed on a 1/1 ratio to create a reaction that results in an inert material. Never manually mix volumes greater than 5 litres in order to prevent the development of excessive exothermic heat.

OTHER INFORMATION

The information contained in this Technical Data Sheet, as well as our advice, both written and verbal or provided through testing, is based on our experience, and does not constitute any product guarantee.
We recommend to study thoroughly all information provided before proceeding to handle or apply of any of our products, and strongly advise to conduct tests “on-site” in order to determine the products suitability for a specific project.
Our recommendations do not exempt the obligation of installers to determine the suitability of the product and the application methods for each project.
The application, use and processing of our products are beyond our control, and are therefore under the exclusive control and responsibility of the installer. Consequently, the installer is responsible of any damage caused by the partial or non-observation of Krypton`s guidelines and instructions and in general, any inappropriate use or application of these materials.

This Technical Data Sheet supersedes previous versions.