

KRYPTON – ProLine PU1000 TC

Aliphatic one-component polyurethane resin



TECHNICAL DATA SHEET

DESCRIPTION

ProLine PU1000 TC is a one component, aliphatic polyurethane, that cures upon reaction with atmospheric moisture. **ProLine PU1000 TC** provides a hard yet flexible protective coating with good abrasion, scratch and weather resistance.

ProLine PU1000 TC provides high resistance against common chemical agents and excellent, colour fast UV surface protection for use over aromatic coating and waterproofing systems.

APPLICATION

- Colour fast, UV and chemical protection topcoat of steel surface in anticorrosion systems
- For structures in medium, high, very high atmospheric corrosivity categories (C3, C4 Y C5- ISO 12944-2:2018)
- Protective UV topcoat for cold or hot-applied waterproofing membranes
- Protection of outdoor wood surfaces
- General outdoor use

ADVANTAGES

- Easy to apply one-component product.
- Excellent resistance to atmospheric corrosion and abrasion
- Excellent resistance to UV and colour stable.
- Long term protection of Rayston aromatic coating systems.
- Fast curing
- Semi-gloss finish.
- Can be delivered colourless or pigmented with standard colour. Colourless product can be pigmented on site by addition of suitable colour paste.

CERTIFICATIONS

Top coat for anticorrosion system with polyurea, certified C5H, ISO 12944-6:2018 compliant

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description Solvent borne single-component aliphatic polyurethane

Physical state Liquid

Packaging Metal container: 4 / 20 kg (colourless)
6kg / 25kg (pigmented)

Non-volatile content (%) >50% (colourless)
>70% (pigmented)

Flash point 36° C (ASTM D 93)

Available colours Colourless. Pigmented in white and gray. Other colours under request

Density Colourless: 0.95 g/cm³ (20°C)
Pigmented: 1.35 g/cm³ (20°C)

Viscosity Brookfield, approx.	Temperature (°C)	Viscosity (mPa.s)	
		Colourless	Pigmented
	5	890	1000
	10	660	800
	20	410	600
	30	230	300

VOC (g/L i %) VOC content: 468,76 g/l (colourless), 380 g/l (pigmented)
Voc class % VOC: 50
Product subclass: i II Solvent based single-component performance products
Limit from 01/01/2010: 500 g/l

Pot life Colourless: 6 hours (1 kg, 20°C, 50% hr)
Pigmented: 2 hours (forms skin on surface)
Storage Keep at a temperature below 35°C, away from ignition sources and moisture
6 months (pigmented) after manufacture in its sealed original container.

INFORMATION ON THE FINAL PRODUCT

Final appearance Solid elastomeric membrane
Colour White and gray pigmented. Other colours under request

Hardness (Shore) 53D (colourless)
60D (pigmented)

Mechanical properties Colourless
Maximum elongation: 173%
Tensile strength: 27.4 MPa
Pigmented
Maximum elongation: 70%
Tensile strength: 15 MPa

Water vapour permeability 2.7 g/m² Day, (UNE EN ISO 7783)

Abrasion resistance 11 mg (taber, CS-10,1 kg)

UV Resistance UV resistant. Aliphatic polyurethanes are colour-stable, non-yellowing

Slip Resistance With quartz sand spreaded onto (0,4-0,9 mm) at 1 kg/m³: class 3 as per UNE EN 12633-2003

Thermal resistance/use temperature Stable up to 80°C

SRI Index (ASTM E1980-01) 104,5-105,4 (white pigmented)

Chemical resistance Permanent contact (0=worst, 5=best)

	Chemical	Conditions	Results
Water		15d, 80°C	5
Salt water (saturated)		5d, 80°C	5
Hydrochloric acid (200 g/l)		7d, 80°C	0
Hydrochloric acid (20 g/l)		7d, 80°C	3 (discolouration)
Sodium hydroxide (40 g/l)		28d, 80°C	5
Sodium hydroxide (4 g/l)		28d, 80°C	3
Ammonia		28d, 80°C	4
Bleach, pure		7d, 80°C	0
Bleach (10% solution)		7d, 80°C	0
Xylene		7d, 80°C	5
Isopropyl alcohol		7d, 80°C	3 (discolouration)
Engine oil		28d, 80°C	5
Diesel		16d, 80°C	3 (discolouration)

Superficial contact. Non pigmented Colodur. (0=worst, 5=best)

Hydrochloric acid (20 g/l)	7d	2
Acetic acid 6%	24d	5



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Skydrol	7d	4
Diesel	1d	5

SURFACE PREPARATION

Surface Type	Minimum	Recommended
Surface Profile	Ry5 (30–75 µm) (ISO 8503-1)	Ry5 (30–75 µm) (ISO 8503-1)
Steel surface	Sa 2 (ISO 8501-1)	Sa 2½ (ISO 8501-1)
Primed and previously painted surfaces	P St3; P Ma ISO 8501-2, ISO 12944-4	P Sa2; PMa ISO 8501-2½, ISO 12944-4
Concrete	SSPC-SP 13/ NACE No. 6	SSPC-SP 13/ NACE No. 6

RECOMMENDED ENVIRONMENTAL CONDITIONS

Steel temperature should be between 10°C and 40°C. At higher temperatures, specific precautionary measures must be taken. Please follow manufacturer advice. Relative Humidity below 85%, and dew point at least 3°C lower than steel temperature.

Concrete: Support moisture should be less than 4%.

THICKNESS AND THEORETICAL SPREADING RATE

	Minimum	Maximum
Dry Film Thickness	60µ	150µ
Wet Film Thickness	86µ	215µ
Spreading Rate:	11.6 m ² /l	4.66 m ² /l

Note: Practical coverage depends on the application conditions, type of structure to be painted, roughness of the surface and application method.

MIXING

If necessary, dilute with up to 10% Solvent Rayston for viscosity adjustment.

APPLICATION

Apply by airless spraying equipment. It is not recommended the application by roller with low thickness film.

For airless spraying equipment, viscosity is likely to need adjustment. Excess pressure, along with high temperature and humidity, may give rise to micro bubbles that makes the surface to look hazy.

For pigmented applications, mix the pigment paste with Colodur by means of a low speed stirrer and wait some minutes to allow bubbles to disappear. Apply the pigmented colour normally. It is recommended to use all the pigmented mixture.

CURING TIME

Curing time is dependent on the environmental conditions. Curing rate increases with temperature and humidity rises. The following table gives a rough estimation of the curing time under diverse conditions for a 100 µ coat.

Conditions	Touch dry (h)
30°C, 50% hr	2
25°C, 50% hr	3

REAPPLICATION

A second coat can be applied when the first one is no longer sticky. Do not wait more than 24 hours for the next coat application to ensure good inter coat adhesion.

RETURN TO SERVICE

Total curing depending on final use, it is recommended to wait 7-10 days. Final hardness development may take up to 15 days.

TOOL CLEANING

Cleaning with Rayston Solvent, acetone and alcohols. Once hardened, it cannot be dissolved.

FAQS

Problem	Question	Cause	Solution
Does not cure	Suitable solvent?	Some thinning solvents are not suitable	Apply a second coat using only Rayston Solvent as a diluant
Bubbles	Airless	High pressure	Lower pressure or apply thinner coats. Ambiental conditions may be adverse for this application method.
Not enough opacity	Horizontal?	Not enough pigment	Mix well
	Curing rate can be slower?		Use of slow solvent Rayston can be useful

SAFETY

Contains isocyanates and flammable solvents. Always follow the instructions provided in the material safety data sheet and take the precaution described there. Only use in areas with suitable ventilation and all ignition sources must be avoided. This product is intended to be used only for the uses and in the way here described. This product is to be used only by industrial or professional users. It is not suitable for DIY-type uses.

ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled taking the same precautions as if they were full. Containers must be considered as hazardous waste, to be transferred to an authorized waste manager. If there is some residual product in the containers, do not mix it with other substances without checking for possible dangerous reactions.

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.



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