



1 General Information

Product Description/Use

RINOL PL1 AE is a 100% solids, liquid, pure polyurea membrane based on isocyanates and special flexible amines, designed for waterproofing, flooring, metal protection and concrete protection. The material meets the reaction-to-fire requirements of B roof(t4) and Bfl-s1 in accordance with UNI EN 13501.

RINOL PL1 AE is an elastomeric liquid formulation which, after reaction, forms an elastic, tough membrane without weight loss or shrinkage. Thanks to its rapid polymerisation, RINOL PL1 AE can also be applied at low temperatures and relatively high humidity.

Application fields of RINOL PL1 AE:

- Roof waterproofing
- Bridges, stadiums, airports and railways
- Industrial production facilities
- Structural reinforcement
- Tunnels
- Tank lining
- Ship decks and port areas
- Coatings for gas pipelines, oil pipelines and refineries
- Primary and secondary containment
- Coating of decorative/scenic structures
- Parking decks

2 Application guide

Substrate Preparation

The substrate must have sufficient load-bearing capacity, with a compressive strength of at least 25 N/mm². The tensile bond strength must be at least 1.5 N/mm². Compatibility with existing coatings must be checked by the applicator. In such cases, a test application is recommended.

The substrate must be clean and free from oil, release agents and any other contaminants. In general, it must be checked whether the substrate is open-pored, porous or similar, as blisters and pores may otherwise form in the coating. This must be checked by the applicator and remedied if necessary.

Before applying RINOL PL1 AE, the substrate must be primed with an epoxy or polyurethane primer and broadcast with RINOL QS10 or RINOL QS20 quartz sand, in accordance with the respective product data sheets.

Before application, the substrate temperature must be at least 3°C above the dew point to ensure good adhesion.

In the case of damp substrates, RINOL EP-P242 primer is recommended, followed by a further uniform coat of epoxy or polyurethane primer.

Care must be taken to ensure that RINOL PL1 AE does not come into contact with silicone-containing materials or other materials that may interfere with the reaction, either before or during the curing phase.

Application

The product is supplied in two-component packages in pre-measured quantities.

Mix Component A, resin, thoroughly for a few minutes with a low-speed

Technical data		
Liquid material (A+B)		
1	Density (A+B)	Approx. 1,18 g/cm ³
2	Packaging and mixing ratio (2-components)	40 kg / 400 kg 1:1 in volume
3	Shelf life / storage	6 months at 5–20°C, store above freezing and out of direct sunlight (even during transport)
4	Colours	See RINOL colour chart

Technical data		
Cured material		
1	Adhesion strength on concrete (UNI 8276-6)	> 1.5 MPa
2	Adhesion strength on metal (UNI 8276-6)	> 7 MPa
3	Tensile strength (EN ISO 527-2)	> 30 N/mm ²
4	Elongation at break (EN ISO 527-2)	>300%
5	Elastic modulus (EN ISO 527-2)	>20 N/mm ²
6	Shore D hardness (EN ISO 868)	>45
7	Water vapour permeability (UNI EN ISO 7783)	μ > 350

Technical data		
Application data		
1	Material consumption	2–3 kg/m ²
2	Application temperature	5 - 40°C
3	Rel. Humidity	Max. 80 %
4	Gel time (depending on application temperature)	Approx. 10 seconds
5	Full properties (20°C)	After 12 hours

mechanical mixer until the mixture is smooth and uniform in colour. This step is essential to homogenise any sedimentation that may have occurred during storage.

A high-pressure plural-component spray unit equipped with a self-cleaning spray gun must be used to apply the RINOL PL1 AE membrane.

The high-pressure system must always be in perfect, clean and efficient working condition. The return lines/pumps must also be clean and efficient. Recirculate the product before starting spraying. In all cases, carefully follow the machine manufacturer's instructions.

The isocyanate component of the system is particularly sensitive and reactive in humid environments. It is therefore recommended to use desiccant filters or other suitable means to introduce dry air into the packaging. If isocyanate drums are not completely used, they must be checked for cleanliness and absence of contamination before reuse.

The guidelines in the Code of Good Practice for the proper application of polyurea, prepared by the PDA Europe Committee, should also be consulted.

Pay special attention to the following parameters during application:

Air temperature	From + 5°C to + 40°C
Air humidity	Maximum 80% RH
Temperature of the substrate	From + 5°C to + 40°C
Moisture of the substrate	Maximum 4%
Temperature of the two components	From + 60° C to + 80° C
Pipe temperature	From + 60° C to + 80° C
Application pressure	120 to 200 bar

Safety measures

For information on handling the product, refer to the valid Safety Data Sheet and the applicable regulations for the handling of coating materials, including M004/M023. Suitable protective clothing and safety goggles must be worn during application.

Skin contact with liquid resins can be harmful to health and may cause allergic reactions.

Note

The technical data for the Company's products and systems have been compiled with due care. However, any recommendations or suggestions made with regard to the use of these products are made without guarantee as the conditions under which they are used are beyond the control of the Company. It is the responsibility of the customer to determine whether the products are suitable for the particular application and whether the conditions of use are appropriate for the particular product. No liability can therefore be derived from the product data sheet.

Please note that only the latest version of the data sheet is valid and replaces all previous versions. The technical data given are approximate values determined by us and do not constitute a guarantee of properties. Misprints, errors, translation errors and changes reserved. Please note that the information in the system datasheets may differ in different languages/countries. For further information please visit our website at www.rinol.com.

The technical data sheet does not exempt the user from carrying out his own application tests, if necessary, within the limits of his capabilities. Please refer to the RINOL Technical Guide for information on coating options and more detailed information on the installation of RINOL products.

Important note

Due to its aromatic chemical structure, coatings made with RINOL PL1 AE tend to yellow over time when exposed to UV light. Yellowing does not affect the technical properties of the product. However, to maintain colour stability, it is recommended to protect the coating with the aliphatic coloured topcoat RINOL PU-S603.

Legal note

RCR Flooring Products Italia S.r.l. does not guarantee the results or adhesion, for whatever reason and/or legal nature, due to differences in materials, substrates and working conditions. The latest General Terms and Conditions of RCR Flooring Products Italia S.r.l. apply and can be requested from us or viewed and printed in their latest version at www.rinol.com. Product specifications are subject to change without notice.

CE marking

 RCR Flooring Products Italia S.r.l. Via V. Chiarugi 76/U I-45100 Rovigo 1119-CPR-0833 09 ¹ EN 1504-2

Synthetic resin coating for the protection of concrete surfaces (systems in accordance with the technical data sheets)	
Property	Value
Abrasion resistance (Taber test)	< 3000 mg
Capillary absorption and water permeability	< 0,1 kg·m ⁻² ·h ^{-0.5}
CO ₂ permeability	s _p > 50 m
Water vapour permeability	Class I
Impact resistance	Class III
Adhesion by pull-off test	> 1,5 N/mm ²
Reaction to fire	Bfl-s1
Hazardous substances	See Safety Data Sheet

-1) the last two numbers of the year in which the CE marking was applied

-2) NPD = no performance determined;

European Regulation 2004/42 (Decopaint Directive)

The maximum VOC content (product category IIA/j type sb) allowed by

RINOL *PL1 AE*

POLYUREA COATING FOR STRUCTURAL WATERPROOFING AND FIRE-RATED APPLICATIONS



European Regulation 2004/42 is 500 g/l (2010 limit) in the ready-to-use state. The VOC content of RINOL PL1 AE in the ready-to-use state is ≤ 500 g/l.

GIS Code: PU40

Further information on the GIS code is available from Wingis online at <https://www.wingisonline.de>