



APPLICATION GUIDE.

Rayston Proof PUA H Plus System

by Krypton Chemical

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1. General conditions

RECOMMENDATIONS

MANUFACTURER

The manufacturer of the products used in the work described in this specification shall demonstrate in writing that its Quality Assurance System complies with the requirements of Spanish Standard UNE-ISO 9001.

APPLICATOR

For the correct application of the systems specified in this report, it is recommended that the application company has successfully completed a training program on their installation or application and the appropriate methods for preparing the substrate. It must also have the necessary equipment for the correct application of the product. The application company must have the necessary means and equipment in suitable condition for the correct application of the system.

APPLICATION PROCEDURE:

ENVIRONMENTAL CONDITIONS

Before starting the work described in this specification, check that the environmental conditions, the work site, and the substrate are suitable for application.

The final responsibility for any decision regarding the application of the system on site shall lie with the site manager, construction manager, and/or builder, and in no case with the product supplier.

PREPARATION

Proper preparation of the substrate is vital for the correct application of the products. Therefore, the technical instructions recommended by the manufacturer must be followed.

APPLICATION

We recommend applying or installing the products described in this report in accordance with the manufacturer's instructions and in compliance with current regulations.

PROTECTION SYSTEMS

Before starting the application work, the necessary measures must be taken to protect workers in accordance with Occupational Risk Prevention regulations, and to ensure that personnel not involved in the work are not affected by the application.

2. Proposed solution

This document is intended to assist you and the applicator during the application of the **RAYSTON PROOF PUA H Plus** system. High-performance liquid waterproofing system, applied by hot spraying on a metal surface (Aluzinc).

To this end, the preliminary actions to be carried out on the surface must be defined in order to mitigate the risk of future injuries. In addition, we will take into account the minimum properties that the substrate must meet in order to mitigate future risks.

3. System steps

The system must follow these steps:

- Krypton Proline PU AL Primer.
- Sprayed membrane: Impermax Polyurea H Flex.
- Top coat: Colodur.

[FT flashing](#)

4. Substrate requirements and treatment of details and specific points

1 Substrate requirements

The substrate must be completely clean, dry, and free of contaminants (salts, grease, oils, etc.).

2 Environmental conditions during application

It is important to monitor the ambient temperature and humidity throughout the application cycle to prevent accelerated reactions.

The substrate must be as dry as possible.

Recommended ambient temperature conditions: Min. +10°C, Max. +30°C.

Always apply (each layer of the treatment) on a substrate whose temperature is 3°C above the dew point (to avoid condensation of ambient humidity on the substrate).

3 Substrate preparation:

In all cases, it is very important to ensure that the system is properly anchored to the entire surface. To do this, the surface must be thoroughly washed and degreased with hot pressurized water (with a neutral detergent) or high-pressure washing that can provide:

- Sufficient hygiene in the existing treatment to ensure good adhesion of the system to be applied.
- Help remove impurities and residues from the top film and stains in areas where this could lead to adhesion failures and poor compatibility.

Non-ferrous metal substrate (galvanized steel, stainless steel, aluminum, and aluzinc):

Repair of specific areas: Replacement of rusted or degraded screws, sealing of screws, joints between metal plates with no relative movement between them and small cracks with a Rayston Flex type polyurethane mastic.

Overlapping metal sheets with significant relative movement between them should be treated with adhesive duct tape (polyethylene). Polyureas applied on top do not adhere well to polyolefins, allowing these sheets to move freely under the membrane and preventing possible cracks in the membrane in the long term.

If there are any areas with surface rust/dirt, these should be removed by mechanical brushing. They should then be treated with 0.25 kg/m² of PU AL Primer, which is required to provide corrosion protection for the roof.

These products are moisture-cured single-component polyurethanes that provide excellent adhesion to the substrate, fully adhering to the substrate and anti-corrosive primers, giving the system protection against corrosion. As they are single-component, they are easy to apply with minimal surface preparation, consisting of high-pressure washing to remove dirt and brushing or sanding, ideal for repair projects. They should be applied using an airless sprayer or roller.

Cleaning the metal surface at these points of incipient corrosion will keep it rust-free for many years. The surface to be treated must be free of poorly adhered parts (e.g., peeling paint) or loose particles. The substrate must be completely dry. Always apply to a surface with a temperature 3°C above the dew point.

4 Treatment of details and specific areas:

Take special care and attention when applying and finishing in areas that are difficult to access and apply, such as skylights or other specific areas.

5. Steps and application of the system

5.1 Primer

Apply one or two coats of 80 microns (0.25 kg/m^2) of **PU AL Primer**, a moisture-cured, single-component polyurethane primer with aluminum and micaceous iron oxide (MIO) pigments.

Application:

- At temperatures below freezing down to -18°C .
- At high relative humidity up to 99%.
- No dew point restrictions.
- No restrictions on maximum recoating time.
- Minimal surface preparation to St2 grade (ISO 8501-1).
- As a sealing coat for non-metallic and galvanized surfaces.

Provides:

- High adhesion, anti-corrosion properties, and barrier effect due to aluminum and micaceous iron oxide (MIO) pigments.

Application tools PU AL Primer:



5.2 Main membrane

Impermax Polyurea H Flex is a two-component, fast-curing polyurea-based system for the application of elastic membranes with high chemical and mechanical resistance. To achieve good protection on metal, a layer of polyurea resin should be applied at a rate of 2 kg/m^2 .

Impermax H Flex polyurea should be applied using a spray machine. The parameters of the dosing machine (temperatures, pressures, etc.) are specified in the resin's technical data sheet.

Note: Impermax Polyurea H Flex is highly stable in outdoor conditions and UV rays, but its color is not. Performance (except color) remains unchanged when exposed to outdoor conditions for long periods of time, even if no top coat is applied, as the chemical and mechanical resistance of the resin does not deteriorate when exposed to sunlight and UV radiation.

5.3 Top coat

Colodur is a single-component, solvent-based polyurethane resin with high resistance to outdoor conditions, UV radiation, chemicals, abrasion, and scratching. For this system, we recommend applying 0.5 kg/m^2 using a roller or airless spray in two coats of 0.25 kg/m^2 each.

If a non-slip and low-abrasive top coat is required, the resin can be mixed with the Anti-Slip Additive (fine or coarse). A more non-slip but also more abrasive top coat can be obtained by sprinkling 0.3-0.8 mm quartz sand at a rate of $1-2 \text{ kg/m}^2$ onto the first fresh coat of resin.

Once this has cured, apply the second sealing coat.

Colodur will need about 7 days to achieve its final chemical and mechanical resistance, depending on environmental conditions.

Note: Use white pigmentation to achieve the "Cool Roof" effect and obtain an SRI of 105.

6. Certificates

Impermax Polyurea H Flex Certificates

ETE (European Technical Evaluation) number 16/149 issued by the Torroja Institute, the reference laboratory for construction materials in Spain.

- Broof(t2) external fire performance certificate. The Broof(t2) external fire performance certificate is much more demanding than the minimum Broof(t1) requirement.
- Reaction to fire, B2 according to German standard DIN-4102-1998.
- Hail resistance certificate according to European standard EN-13583:2.012.
- Crack bridging capacity, static, tested according to standard EN-1062-7, at -10°C. (Class A5, the highest possible, according to standard EN-1504-2).
- Resistance to accelerated aging by heat, according to EOTA TR11 standard.

Colodur Certificates

The Colodur product has been thoroughly tested by the Applus Laboratory in the following tests:

- Adhesion resistance, UNE-EN 13892-8:2003
- Impact resistance, UNE-EN ISO 6272-1:2012
- BCA wear resistance, UNE-EN 13892-4:2003
- Determination of the slip resistance value
slip/sliding resistance of unpolished flooring (USRV). UNE-ENV 12633:2003, Annex A.
- Abrasion resistance TABER s/n UNE 48250
- Scratch resistance n/a UNE EN ISO 1518
- Resistance to liquids (motor oil and diesel) n/a UNE EN ISO 2812-3 and UNE EN ISO 2812-4
- Resistance to staining by contact with vulcanized rubber
- Gloss determination n/a UNE EN ISO 2813
- Water vapor permeability, UNE EN ISO 778-1 and UNE EN ISO 7783-2

7. Maintenance

It is advisable to maintain the installations and carry out periodic cleaning, removing surface residues and dirt before cleaning.

A minimum frequency of two visual inspections per year is recommended, one at the beginning of spring and the other at the beginning of autumn.

In addition, the roof should always be inspected after other professionals have carried out work such as construction, installation of new equipment, or repair of existing equipment.

8. Conclusions

The **RAYSTON PROOF PUA H Plus** system proposed by Krypton Chemical has been used in a large number of construction and roof renovation projects in Spain and other countries. It has a long track record of success.

This system is completely continuous (without joints), remains adhered to the treated surface, and offers high resistance over time. In addition, it is a system that easily and effectively solves all the unique issues that may be encountered in an installation of this type.

This system, applied on site by a Krypton Chemical-approved company, has CE marking based on tests carried out by the APPLUS laboratory.

The proposed top coat system will improve performance, appearance, and aesthetics in the long term.

The information contained in this document, as well as the advice given by Krypton Chemical, SL professionals, whether written, oral, or through testing, is provided in good faith based on our experience and the results obtained through tests carried out by independent laboratories and does not serve as a guarantee for the applicator, who should take it as a reference only and for informational purposes. We recommend that you study this information thoroughly before choosing, using, or applying any of these products. It is advisable to carry out tests on site to determine the suitability of a treatment in that location. Our recommendations do not exempt the user from the obligation to have in-depth knowledge of the correct method of application of these systems before proceeding with their use, as well as to carry out as many tests as necessary in case of doubt about their suitability for any work, installation, or repair, taking into account the specific circumstances in which the product will be used.

The obligations of Krypton are those established by Law 38/1999 on Building Regulations in Article 15 in its capacity as a product supplier. Under no circumstances shall it be assumed that Krypton is assuming the responsibilities and obligations corresponding to the project manager, the construction manager, and the builder as established therein.

The obligations of Krypton shall be solely those that can be claimed from a product supplier. Under no circumstances, through this or any other document, does Krypton assume the responsibilities and obligations corresponding to the construction manager, the construction supervisor, or the builder.

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