



APPLICATION GUIDE.

Rayston Floor PAS 20 System

by Krypton Chemical

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1. General terms and conditions

RECOMMENDATIONS

MANUFACTURER

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

APPLICATOR

For a correct application of the systems specified in this report, it is recommended that the application company has satisfactorily completed an instruction program on their installation or application and the appropriate methods for the preparation of the substrate, in addition to having the necessary equipment for the correct application of the product.

The application company must have the means and equipment necessary and in suitable conditions for the correct application of the system.

EXECUTION OF THE APPLICATION:

CONDITIONS

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

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

PREPARATION

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

APPLICATION

It is recommended that the products described in this report be applied or installed according to the manufacturer's instructions and in compliance with current regulations.

PROTECTIVE SYSTEMS

Before starting the application work, the necessary measures will be taken for the protection of workers in terms of Occupational Risk Prevention, and the appropriate measures will be taken so that personnel outside the work site 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 FLOOR PAS 20** system.

Two-component, solvent-free, aliphatic, pigmented polyaspartic system. With an anti-slip finish, unlike classic systems, it has a sufficiently long gelling and curing time to allow manual mixing and application, while maintaining a much shorter drying time than two-component polyurethane systems.

For this purpose, the previous actions to be carried out on the facing to mitigate the risk of future injuries must be defined. In addition, we will take into account the minimum properties that the support must comply with to mitigate future risks.

3. System Steps

The system should follow the following steps:

- Primer: Rayston Epoxy 100
- Main Layer: Kryptanate 100 LV
- Top Coat: Kryptanate 100 LV

4. Substrate requirements and treatment of details and singular points.

1 Requirements to be met by the Substrate:

The concrete substrate must meet the following properties:

- Minimum cohesion (pull-out/tensile strength) of 1.5 N/mm².
- The concrete substrate must be compact and have sufficient compressive strength (minimum 25 N/mm²).



Pull-off
(pull-off)



Schmidt
hammer
(compression)

- RH <4%.
- Seamless
- Cohesive
- Not contaminated
- Leveling

(If not, the coating will mark the existing irregularities).

2 Moisture Content, Ambient and Substrate Temperatures.

Before application, confirm the moisture content of the substrate, RH, dew point or dew point. If the humidity of the substrate is higher than 8%, and if it is possible we should dry the surface by means of devices enabled for this purpose, otherwise another type of primer will be evaluated.

The temperature and humidity of the environment and substrate (min. + 10°C and max. + 30°C) should be controlled during the whole application cycle (before - during - after), to avoid accelerated reactions. In addition to this, the dew point should also be controlled (always apply when the temperature is 3°C above).

Note: The speed of any chemical reaction depends on the temperature, as a general rule the higher the temperature, the faster the reaction. Condensation on the substrate should be at least 3°C above the dew point, and the ambient humidity should not exceed 85%.

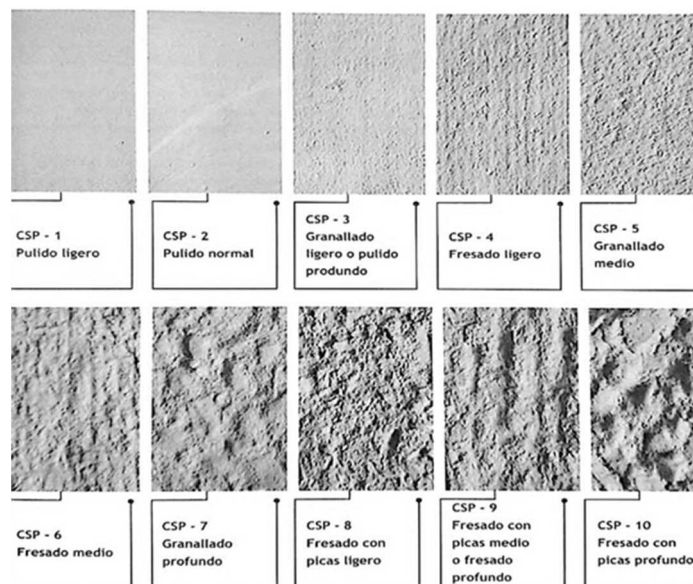
3 Preparation of the substrate

To ensure a good compatibility of the system with the existing substrate and to obtain good adhesion, it is very important that the support has minimum conditions and the following ones properties:

1. Cohesive.
2. Regular and homogeneous.
3. Fully continuous.
4. Free of fissures, cracks and crazing (to be treated beforehand).
5. Clean and free of dust, grease, fluids and any other type of contaminating chemical agent.
6. Fully cured.
7. Free of particles and other materials not completely adhered to the substrate.
8. As dry as possible (no risk of negative pressure).

The stand will be washed with a high-pressure water machine to remove the dirt (degreasing) and impurities. It will be important that there are no material remains since may affect the adhesion of the membrane to the substrate.

The degree of roughness in concrete should be CSP3- CSP5 according to ICRI (INTERNATIONAL INSTITUTE for Concrete Repair) Technical Guide No. 03732 "Selection and Specification of Concrete Surface Preparation for Coatings, Sealers and Polymeric Coatings. "



4 Treatment of damages and shocks:

Before priming the surface, local treatments will be made with dry mortar based on Rayston Epoxy 100 resin, with 0.4 to 0.9 mm granulometry aggregate or equivalent, or with cementitious repair mortar type R4, assuring a complete aesthetic homogeneity with the existing treatment. Possible cracks or small cavities will be filled with a polyurethane putty type Rayston Flex or equivalent.

5 Treatment of details and singular points:

Right angles should be avoided in horizontal-vertical joints, corners and other parts of the structure, so it is advisable to round these areas of the surface with a mortar (**half-rounds**).



Regarding the **expansion joints** of the structure, if they have a movement greater than 50% of the joint size, mechanical joints should be placed (for example, a joint with a minimum width of 10 cm should be opened a maximum of 15 cm). To ensure the watertightness of the system, these mechanical joints should be placed according to the manufacturer's specific recommendations.

If the movement is smaller, they can be treated with Rayston Joint Geo high elasticity band, after filling them appropriately (polyethylene foam cylinder and polyurethane putty type Rayston Flex). Rayston Joint Geo adheres to the primed substrate thanks to an adhesive (PU 2K adhesive) or an epoxy resin such as Rayston Epoxy 100 applied on the geotextile adhered to the membrane. Polyurea membranes do not have a good adhesion on the Rayston Flex Joint Geo strip, so that, in case of movement of the joint, this movement will not be transferred to the polyurea membrane, or in any case the movement will be attenuated to this polyurea membrane, reducing the risk of cracking of the same.

Rayston Joint Geo can be supplied in different widths, it is advisable to always use a band with the appropriate width.

For small jobs, Rayston Flex 3040 one-component polyurethane putty should be applied manually. For higher productivity, it is possible to apply, alternatively, the very high elasticity polyurea based filler (bi-component, curing in a few seconds) reference Rayston Flex 70 with the Rayston Spray Gun portable machine. If it is necessary to fill a large number of linear meters of joint, the application will be more efficient with the Rayston G-1 machine.

Similar treatment will be done on cracks larger than 2 mm or even smaller in width if they are suspected of moving and/or continuing to open over time (unstabilized cracks or fissures).

Important: Treatment done in winter (lowest possible temperatures) will always be more effective than treatment done in summer. In winter, with low temperatures, the materials will be contracted and the joint edges will be farther apart. In summer, with high temperatures, the materials will be expanded and the joint edges will be closer together. If the treatment is done in summer, without leaving any slack in the membrane, as winter sets in and the environment cools, the joint edges will separate and the membrane will be stressed with the risk of cracking.

5. Steps and Application of the System

5.1 Primer

RAYSTON EPOXY 100 is a high viscosity, high solids epoxy system consisting of 2 pre-metered components. Depending on the porosity of the substrate, it can be thinned with Rayston solvent to improve liquid penetration and adhesion performance. Ideally applied in two stages to achieve maximum adhesion.

Apply 0.5 Kg/m² of Rayston Epoxy 100 in two coats. The first coat of primer can be diluted with 10%-15% of Rayston Thinner, to penetrate (anchor) inside the surface and help its consolidation. A total of 0.2 Kg/m² should be applied in this first coat.

Then, once the first coat has cured, apply the second coat with a light wet dusting of 0.3 - 0.8 mm granulometry aggregates. A total of 0.3 Kg/m² will be applied.

For its application, the material must be spread evenly avoiding accumulations, working within the useful life of the product (see FT), with rubber trowel or roller.

Important: The primer is applied with the purpose of sealing the porosity of a surface. It should never be applied when there is rising air, i.e. when there is direct sunlight on a porous exterior surface that is gradually heating up. The product recommended in this system RAYSTON EPOXY 100 can only be used if the humidity of the substrate is less than 4% (if it is higher, ask the technical office for a list of primers).

Application tools Rayston Epoxy 100:



5.2 Main layer

KRYPTANATE 100 LV is a slow-reacting polyaspartic two-component system which, unlike classic systems, has a sufficiently long gel and cure time to allow manual mixing and application, while maintaining a much shorter drying time than two-component polyurethane systems. It is supplied colorless or pigmented.

For this system, the amount to be applied is a layer of 1.20 Kg/m² previously mixed with aggregates of granulometry 0.1- 0.3 mm in a ratio of 1:0.8 (resin:aggregate).

Once the resin has been applied freshly, aggregates should be sprinkled until saturation with a particle size of 0.3-0.8 mm with an allowance of 2-2.5 Kg/m⁽²⁾.

Note: Once the product has dried, sweep or vacuum the excess aggregate and then apply the Top Coat finish coat.

5.3 Top Coat

KRYPTANATE 100 LV is a slow-reacting polyaspartic two-component system which, unlike classic systems, has a sufficiently long gel and cure time to allow manual mixing and application, while maintaining a much shorter drying time than two-component polyurethane systems. It is supplied colorless or pigmented.

Spread the material with a long nap roller or metal trowel.

The sealing of this system should be done using the same **KRYPTANATE 100 LV** resin, in one coat of 0.5 Kg/m² or two coats of 0.25 Kg/m² each.

6. Certificates

Kryptanate Certificates

The Kryptanate product has been thoroughly tested by Applus Laboratory, which has performed the following tests:

- CE Marking
- UNE-EN 13813: 2003
- Abrasion Resistance TABER s / n UNE 48250
- Scratch resistance s / n UNE EN ISO 1518
- Resistance to liquids (engine and diesel) s / n UNE EN ISO 2812-3 and UNE EN ISO 2812-4
- Luminosity determination s / n UNE EN ISO 2813

7. Maintenance

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

Although polyaspartic resins are non-absorbent products and dirt does not easily adhere to them (facilitating their proper condition and cleaning), it is advisable to maintain the installations and carry out periodic cleaning by removing surface residues and dirt prior to cleaning.

In oily or greasy environments, use neutral detergents with low foaming power or high performance alkaline floor cleaner. For mineral oil contamination, use a high performance neutral degreaser. As with any other cleaning process, dirt must be removed and/or removed from the surface. Bottles of cleaning solutions, if allowed to evaporate or dry, can cause deposits on the surface and the appearance of water marks that may be difficult to remove later.

For floors, especially the larger ones, mechanical cleaning equipment should be used and in areas not accessible to machines we will use hand-held equipment.

In addition, the surface will always be inspected after other professionals have performed work such as construction, installation of new equipment or repair of existing equipment.

8. Conclusions

The **RAYSTON FLOOR PAS 20** system proposed by Krypton Chemical, has been used in a large number of works and rehabilitation projects in Spain and other countries. It has a great track record of success.

This system is totally continuous (without joints), remains adhered to the treated surface and offers great resistance over time. In addition, it is a system that easily and efficiently solves all the singular points that can be found in an installation of these characteristics. It has an aliphatic finish.

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

The information contained in this document, as well as the advice given by the professionals of Krypton Chemical, SL both written and oral or through tests, are given in good faith based on our experience and the results obtained through tests carried out by independent laboratories and do not serve as a guarantee for the applicator, who should take them as purely indicative references and with strictly informative value. We recommend studying this information in depth before proceeding to the choice, use and application of any of these products. It is advisable to carry out "in situ" tests to determine the suitability of a treatment on site. Our recommendations do not exempt the obligation of the applicator to know in depth, the correct method of application of these systems before proceeding to their use, as well as to perform as many tests as appropriate in case of doubt about the suitability of these for any work, installation or repair, taking into account the specific circumstances in which the product will be used.

Krypton's obligations are those established in Article 15 of Law 38/1999 on Building Management in its capacity as a supplier of products. In no case it is assumed that the responsibilities and obligations corresponding to the director of the work and management of the execution of the work and constructor are being assumed as established therein.

Krypton's obligations shall only be those that can be claimed from a supplier of products. In no event, by this or any other document, does Krypton assume the responsibilities and obligations of the construction manager, construction management or builder.

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