



APPLICATION GUIDE.

Rayston Floor EP 30 System

by Krypton Chemical

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1. General 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

To ensure the correct application of the systems specified in this report, it is recommended that the contractor has successfully completed a training programme on their installation or application and the appropriate methods for preparing the substrate; furthermore, they must have the necessary equipment for the correct application of the product.

The application company must have the necessary resources and equipment, in suitable condition, for the correct application of the system.

APPLICATION PROCEDURE:

ENVIRONMENTAL CONDITIONS

Before commencing the work described in this specification, it must be verified that the environmental conditions, site conditions and substrate conditions are suitable for application.

Ultimate responsibility for any decision regarding the application of the system on site shall lie with the site manager, works manager and/or contractor, and under no circumstances with the product supplier.

PREPARATION

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

APPLICATION

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

PROTECTION SYSTEMS

Before commencing application work, the necessary measures must be taken to protect workers in accordance with Health and Safety regulations, and appropriate measures must be taken to ensure that personnel not involved in the works 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 EP 30** system. A two-component, 100% solids, self-levelling system based on polyurethane resins, pigmented, with a non-slip finish for the protection of concrete surfaces and floors.

To this end, the preliminary measures to be carried out on the wall surface must be defined in order to mitigate the risk of future injury. Furthermore, 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 the steps below:

- Primer: Rayston Epoxy 100
- Intermediate coat: EP Nivel + aggregates
- Top coat: Colodur Eco

4. Substrate requirements and treatment of details and specific areas

1 Requirements to be met by the substrate:

The concrete substrate must meet the following properties:

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



- HR <4%
- No cracks
- Cohesive
- Uncontaminated
- Level

(Otherwise, the coating will highlight any existing irregularities)

2 Moisture content, ambient temperatures and substrate.

Before application, check the substrate's moisture content, relative humidity (RH), and dew or condensation point. If the substrate's moisture content exceeds 8%, and if possible, the surface should be dried using appropriate equipment; otherwise, alternative primers should be considered.

Ambient and substrate temperatures and humidity must be monitored throughout the entire application cycle (before, during and after) (min. +10°C and max. +30°C) to prevent accelerated reactions. In addition, the dew point must also be monitored (always apply when the temperature is 3°C above it).

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

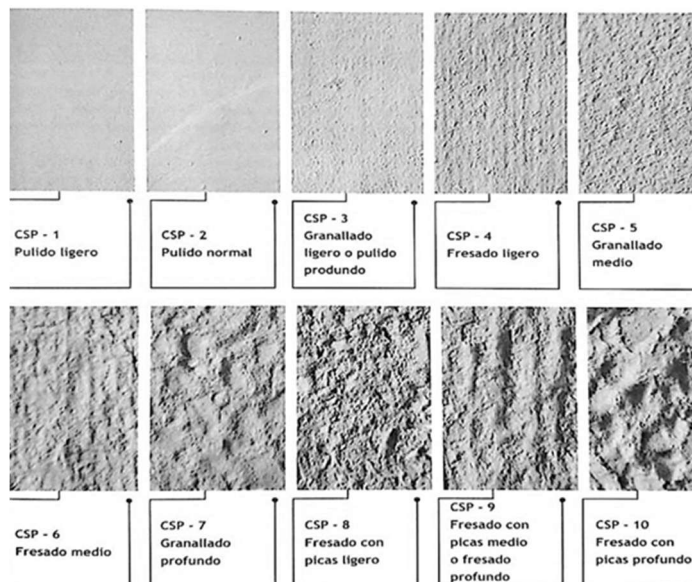
3 Substrate preparation:

To ensure good compatibility of the system with the existing substrate and to achieve good adhesion, it is very important that the substrate meets the following minimum requirements properties:

1. Cohesive.
2. Even and uniform.
3. Completely continuous.
4. Free from fissures, cracks and potholes (which must be treated beforehand).
5. Clean and free from dust, grease, liquids and any other type of chemical contaminant.
6. Fully cured.
7. Free from particles and other materials not fully bonded to the substrate.
8. As dry as possible (with no risk of negative pressure).

The substrate must be washed with a high-pressure water jet to remove dirt (degreasing) and impurities. It is important that no material residues remain, as these may affect the membrane's adhesion to the substrate.

The degree of roughness in the concrete must be CSP3–CSP5 in accordance with Technical Guide No. 03732 of the ICRI (International Concrete Repair Institute) "Selection and Specification of Concrete Surface Preparation for Polymer Coatings, Sealants and Linings".



4 Treatment of damage and impact marks:

Before priming the surface, localised repairs shall be carried out using dry mortar based on Rayston Epoxy 100 resin, with aggregate of 0.4 to 0.9 mm particle size or equivalent, or using R4-type cementitious repair mortar, ensuring complete aesthetic uniformity with the existing surface. Any cracks or small cavities shall be filled with a polyurethane filler such as Rayston Flex or equivalent.

5 Treatment of details and specific areas:

Right angles should be avoided at horizontal-vertical junctions, corners and other parts of the structure; in other words, it is advisable to round off these areas of the surface with mortar (**quarter-rounding**).



With regard to the structure's **expansion joints**, if they have movement exceeding 50% of the joint's width, mechanical joints must be installed (for example, a joint with a minimum width of 10 cm must open to a maximum of 15 cm). To ensure the system's watertightness, these mechanical joints must be installed in accordance with the manufacturer's specific recommendations.

If the movement is smaller, they can be treated with the high-elasticity Rayston Joint Geo tape, after filling them appropriately (polyethylene foam cylinder and polyurethane mastic such as Rayston Flex). Rayston Joint Geo adheres to the primed substrate using an adhesive (2K PU Adhesive) or an epoxy resin such as Rayston Epoxy 100, applied to the geotextile bonded to the tape. Polyurea membranes do not adhere well to the Rayston Flex Joint Geo strip; therefore, in the event of movement in the joint, this movement will not be transferred to the polyurea membrane, or at any rate the movement will reach the polyurea membrane in a dampened form, reducing the risk of cracking in the membrane.

Rayston Joint Geo is available in various widths; it is advisable to always use a strip of the appropriate width.

For small-scale applications, the single-component polyurethane mastic Rayston Flex 3040 should be applied manually. For greater productivity, the highly elastic polyurea-based sealant (two-component, curing in a few seconds), Rayston Flex 70, can alternatively be applied using the portable Rayston Spray Gun. Where a large number of linear metres of joint need to be filled, application will be more efficient using the Rayston G-1 machine.

A similar treatment should be carried out on cracks wider than 2 mm, or even narrower ones if it is suspected that they are moving and/or continuing to open over time (unstabilised cracks or fissures).

Important: Treatment carried out in winter (at the lowest possible temperatures) will always be more effective than treatment carried out in summer. In winter, at low temperatures, the materials will be contracted and the edges of the joint will be further apart. In summer, at high temperatures, the materials will be expanded and the edges of the joints will be closer together. If the treatment is carried out in summer, without leaving any slack in the membrane, when winter arrives and the temperature drops, the edges of the joints will separate and the membrane will become taut, 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 two pre-measured 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 primer coat may be thinned with 10–15% Rayston Solvent to ensure it penetrates (bonds) into the surface and aids in its consolidation. A total of 0.2 kg/m² should be applied in this first coat.

Next, once the first coat has cured, apply the second coat with a light wet dusting of aggregate with a particle size of 0.3–0.8 mm. A total of 0.3 kg/m² should be applied.

To apply, spread the material evenly, avoiding build-up, and work within the product's pot life (see technical data sheet), using a rubber trowel or roller.

Important: The primer is applied to seal the porosity of a surface and must never be applied when there is rising damp, i.e. when there is direct sunlight on a porous exterior surface that is gradually heating up. The product recommended in this system, EPOXY PRIMER 100, may only be used if the substrate moisture content is less than 4%. (If higher, ask the technical department for a list of primers).

Application tools for Rayston Epoxy 100



Llana
de
goma

Rodillo

5.2 Main coat

EP NIVEL is a two-component, pigmented and transparent self-levelling epoxy coating for the protection of concrete surfaces and floors. Self-levelling floors 2–3 mm thick can be achieved in a single application on concrete floors subject to heavy wear in all types of indoor spaces.

In the intermediate layer of the Rayston Floor EP 30 system, apply a mixture prepared in a 1:0.5 ratio of EP Nivel resin to aggregate (particle size 0.1–0.3 mm); for this system, apply 3 kg/m² mixed with the aforementioned aggregate ratio. This should be done by incorporating the following proportion of aggregate into the EP Nivel mixture: For every 1 kg/m² of resin, add 0.5 kg/m² of aggregate with a particle size of 0.1–0.3 mm, mixing thoroughly. To apply the mixture of EP Nivel resin and aggregate, we recommend using a metal trowel. The mixture must be applied immediately after preparation; please note that, depending on the temperature, the working time is approximately 25 minutes at 23 °C, with this time varying depending on whether the temperature is higher or lower than that stated above.

Once the product has dried, any excess aggregate on the surface must be swept or vacuumed up before applying the next coat.

5.3 Finish

Apply 0.5 kg/m² of **COLODUR ECO** in two coats of 0.25 kg/m² each. Colodur Eco is a high-performance, water-based, two-component aliphatic polyurethane resin that provides hard yet flexible coatings with high resistance to abrasion and chemical agents. It provides excellent surface protection for floors subjected to heavy wear and tear. This product does not yellow when exposed to UV rays, making it suitable for outdoor use. The absence of solvents allows this product to be used in areas with public access, without the need to evacuate them.

Apply the material using a Teflon microfibre roller of approx. 5–6 mm with bevelled edges, spreading the material from one end of the floor to the other in the direction of application. Using the same roller in a crosswise direction, distribute the material to cover approximately 1.30 m without overlapping the previous roller pass, then repeat at 1.35 m.

Overlap of less than 5 cm. Then switch to a dry roller and slowly spread the overlap, checking that there are no areas of excess material.

If you wish to achieve a surface without overlaps, always keep the edge of the application 'fresh'.

To achieve a non-slip finish, add 5–7% anti-slip additive to the final coat.

6. Certificates

EP NIVEL Certificates

SELF-LEVELLING FLOORING COMPOUND, UNE-EN 13813:2003:

- BCA wear resistance, UNE-EN 13892-4: 2003
- Impact resistance, UNE-EN ISO 6272-1: 2012
- Adhesion resistance, UNE-EN 13892-8: 2003

Colodur ECO Certificates

The Colodur ECO product has been thoroughly tested by the Applus laboratory, which has carried out the following tests:

- TABER abrasion resistance, in accordance with UNE 48250
 - Scratch resistance s/n UNE EN ISO 1518
 - Resistance to liquids (petrol and diesel) s/n UNE EN ISO 2812-3 and UNE EN ISO 2812-4
 - Resistance to staining caused by contact with vulcanised rubber
 - Determination of brightness s/n UNE EN ISO 2813
 - Colorimetric determination (CIELAB coordinates) in accordance with UNE 48073/2 and ISO 7724/2
 - Determination of whiteness index and yellowness index s/n ASTM E313
 - Accelerated artificial ageing test in the open air
- Test method in accordance with UNE EN ISO 11341: 2005 "Paints and varnishes: Ageing

7. Maintenance

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

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

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

8. Conclusions

The **RAYSTON FLOOR EP 30** system proposed by Krypton Chemical has been used in a large number of construction and refurbishment projects in Spain and other countries. It has a long track record of success.

This system is completely seamless (joint-free), remains firmly bonded to the treated surface and offers excellent long-term durability. Furthermore, it is a system that easily and effectively addresses all the specific issues that may arise in a facility of this nature. It features an aliphatic finish.

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

The information contained in this document, as well as the advice provided by the professionals at Krypton Chemical, SL—whether in writing, verbally or through testing—is given in good faith based on our experience and the results obtained from tests carried out by independent laboratories. It does not serve as a guarantee for the applicator, who should treat it as merely indicative and strictly for informational purposes. We recommend studying this information in depth before proceeding to select, use and apply any of these products. It is advisable to carry out on-site tests to determine the suitability of a treatment at the location. Our recommendations do not exempt the applicator from the obligation to have a thorough understanding of the correct method of application for these systems before proceeding with their use, nor from carrying out as many tests as necessary should there be any doubt regarding their suitability for any work, installation or repair, taking into account the specific circumstances in which the product will be used.

The obligations incumbent upon Krypton are those established by Law 38/1999 on Building Regulations in Article 15 in its capacity as a product supplier. Under no circumstances is it assumed that Krypton is assuming the responsibilities and obligations corresponding to the project manager, the site management and the contractor as set out therein.

The obligations incumbent upon Krypton shall be solely those that may 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 site manager, the project management team or the builder.

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