

# RAYSTON FLOOR D50 FR

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Sprayed, hot-applied polyurea membrane for flooring applications.

## DESCRIPTION

Rayston Floor D50 FR is a 2-component polyurea resin, which cures into a hard membrane for flooring applications, with fire-resistant properties.

## APPLICATION

General fast-applied flooring systems. Decorative and industrial floors, where fast application is needed.

## CERTIFICATIONS

### Os 10 certification

- Tensile bond strength by pull-off test DIN EN 1542.
- Tensile bond strength after thermal cycling with de-iced salt immersion in comparison to the unstressed test specimen (TWBM) DIN EN 13687-1 and DIN EN 13687-2\*.
- Skid/slip resistance and wear resistance DIN EN 13036-4\* and based on DIN EN 660-1\*.
- Crack bridging abilities class IVT+V (-20 °C) after artificial ageing 7 days ZTV-BEL-B 3\* DIN EN 1062-11.
- Fire behavior after application / classification 2) DIN EN ISO 11925-2\*\*.
- Layer thickness DIN EN ISO 2808.

Reaction to fire classification test EN 13501-1:2018: Bfl s1.

## TECHNICAL DATA

| INFORMATION ON THE PRODUCT BEFORE APPLICATION |                                                                                                                                                                 |                      |                                    |                      |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------|----------------------|
|                                               | Component A                                                                                                                                                     |                      | Component B                        |                      |
| Chemical description                          | Polyol/Polyamide                                                                                                                                                |                      | Aromatic isocyanate prepolymer     |                      |
| Physical state                                | Liquid                                                                                                                                                          |                      | Liquid                             |                      |
| Packaging                                     | Metal container<br>195 kg+pigment 4 kg<br>18,6 kg+ pigment 0,4 kg                                                                                               |                      | Metal container<br>221 kg<br>21 kg |                      |
| Non-volatile content                          | Approx 100%                                                                                                                                                     |                      | 100%                               |                      |
| Flash point                                   | >100°C                                                                                                                                                          |                      | >100°C                             |                      |
| Colour                                        | Dark yellow                                                                                                                                                     |                      | Dark yellow                        |                      |
| Density                                       | Tempera<br>ture (°C)                                                                                                                                            | Density<br>(g/cm³)   | Tempera<br>ture (°C)               | Density<br>(g/cm³)   |
|                                               | 25                                                                                                                                                              | 1.02                 | 25                                 | 1.13                 |
| Viscosity                                     | Tempera<br>ture (°C)                                                                                                                                            | Viscosity<br>(mPa.s) | Tempera<br>ture (°C)               | Viscosity<br>(mPa.s) |
|                                               | 25                                                                                                                                                              | 350                  | 25                                 | 460                  |
| A/B mixing ratio                              | A=1, B=1.1 by weight<br>A=1, B=1 by volume                                                                                                                      |                      |                                    |                      |
| Density and viscosity of the mixture          | Fast polymerization. See Pot life data.                                                                                                                         |                      |                                    |                      |
| Colour                                        | Dark yellow, but component A is pigmented by addition of pigment paste (Pigment Spray) for Rayston Floor D50 FR.                                                |                      |                                    |                      |
| Pot life                                      | Gel time mixture A+B (20 g)<br>8-10s at 25°C                                                                                                                    |                      |                                    |                      |
| Storage                                       | Keep between 10° y 30°C. Product is hygroscopic: protect from moisture. Component B may become hazy upon storage at low temperatures. Reheat mildly before use. |                      |                                    |                      |
| Use before                                    | 12 months after manufacture, provided it is kept in its sealed container.                                                                                       |                      |                                    |                      |

## INFORMATION ON THE FINAL PRODUCT

|             |                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------|
| Final state | Solid hard membrane                                                                                     |
| Colour      | Variable, depending on the chosen pigmentation. For colours available, please contact Krypton Chemical. |

|                       |                                                                                                                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hardness (Shore)      | 50D                                                                                                                                                                                                             |
| Mechanical properties | Elongation at break: 300%<br>Tensile strength: 21 MPa<br>(EN-ISO 527-3)<br>Tear strength: 98 N/mm (ISO 34-1, Method B)                                                                                          |
| UV resistance         | Good resistance to UV-induced degradation. Aromatic polyureas undergo change of colour under sunlight. Additional UV protection can be achieved by application of an aliphatic fast curing topcoat (Kryptanate) |

## SUPPORT REQUIREMENTS

To achieve a good penetration and bonding, substrate must be:

- Flat and levelled
- Compact and cohesive (pull off test must show a minimum resistance of 1,4 N/mm²).
- Even and regular surface
- Free from cracks and fissures. If any, they must be previously repaired.
- Clean and dry, free of dust, loose particles, oils, organic residues, or laitance

## RECOMMENDED ENVIRONMENTAL CONDITIONS

Air temperature should be between 10°C and 40°C. Relative air humidity should be less than 85%.

## SUPPORT PREPARATION

Concrete substrates must be prepared mechanically using shot blasting, scarifying or diamond grinding equipment, to grind the surface and obtain an open pore. Substrates must be primed and repaired until a regular surface is obtained. Sharp irregularities are eliminated using an abrading disc machine. Eliminate all dust and loose particles from the substrate by vacuum cleaning.

## MIXING

Add the required pigment to the A-component and stir before loading at low speed for a few minutes. Excess stirring may lead to undesirable moisture pick up. Recirculate both components while heating up to the required application temperatures. **Best Mixing equipment should have extensible blades with overall width equivalent to 1/3 of drum diameter.**

## APPLICATION GUIDELINES

Rayston Floor D50 FR must be applied using a 2-component hot spraying equipment.

Recommended temperatures are:

- Component A: 65-70°C
- Component B: 70-75°C
- Hose: 70°C

Pressure should be 130-150 bar.

During application, check layer thickness and curing speed.

Spray Rayston Floor D50 FR at 2-3 kg/m² as a rule.

Contact Krypton Chemical for more detailed technical information.

## CURING TIME

Rayston Floor D50 FR becomes hard to the touch within minutes of application. Vehicular traffic is possible after 4-5 hours. A top coat can be applied after 60 minutes.

| Time   | Hardness (Shore A and D) |
|--------|--------------------------|
| 10 min | 82A                      |
| 40 min | 89A/35D                  |
| 1h     | 91A/35D                  |
| 2h     | 38D                      |
| 6h     | 43D                      |
| 3d     | 49D                      |
| 7d     | 50D                      |



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## RE-APPLICATION

Usually, needed thickness can be obtained in one single coat.

## TOOL CLEANING

Solvent use for machine component cleaning is discouraged. A cleaning plasticizer fluid is suitable. Component B must be completely removed from all air-exposed parts and replaced with clean fluid.

## CLEANING AND MAINTENANCE

For stain removal, a surface treatment with Rayston solvent or isopropyl alcohol may be attempted. Strong acids are totally inadequate. Some solvents may damage the membrane. If this happens, the affected area must be cut and repaired with fresh product.

## FAQ

| Problem               | Question                                | Cause                                    | Solution                                                                                                                                   |
|-----------------------|-----------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Product does not cure | AB ratio is correct?                    | Pressure differences                     | Check and correct machine operation                                                                                                        |
| Bubbles or open pores | Porous support?                         | No primer                                | Apply suitable primer before Rayston Floor D50 FR                                                                                          |
| No hiding power       | Horizontal?                             | Too little product<br>Too little pigment | Apply 1 kg/m <sup>2</sup> Ensure full A+pigment homogenization                                                                             |
| Colour change         | Exposed to sunlight?                    | UV-reaction                              | Use a last coat in dark grey or red                                                                                                        |
|                       | Can it be applied without pigmentation? |                                          | Not recommended. Rayston Floor D50 FR is always delivered with the pigment of choice. Use of pigment helps to obtain a uniform appearance. |

## SAFETY

Component B contains isocyanates. Always follow the safety instructions in the Material Safety Data Sheet. As a rule, a good ventilation and/or respiratory protection is needed (combined organic vapor filters + particles) along with protective clothing. This product must be used only for the applications here described. This product is intended for industrial and professional use. It is not suitable for DIY-type applications.

## ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled with the same precautions as if they were full. Treat empty containers as hazardous waste and transfer them to an authorized waste manager. If the containers still have some material left, do not mix with other product with no knowledge of potentially dangerous reactions. Component A and B may be mixed on a 1/1 ratio to get an inert material, but never do it in volumes larger than 5 liters to prevent a dangerous heat evolution.

## OTHER INFORMATION

The information contained in this DATA SHEET, as well as our advice, both written as verbal or provided through testing, are based on our experience, and they do not constitute any product guarantee for the installer, who must consider them as simple information. We recommend to study deeply all information provided before proceeding to the use or application of any of our products, and strongly advise to conduct tests "on-site" to determine their convenience for a specific project. Our recommendations do not exempt of the obligation of installers to deeply study the right application method for these systems before use, as well as to conduct as many preliminary tests as possible should any doubt arise. The application, use and processing of our products are beyond our control, and therefore under the exclusive responsibility of the installer.



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