RAYSTON FLOOR D40 FR

Spray applied polyurea membrane

DESCRIPTION

Rayston Floor D40 FR is a polyurea resin, applied with a hot projection machine, totally free of solvents and mineral fillers. Once cured, it forms a totally continuous coating (without joints or overlaps), with high mechanical and exterior resistance, thermosetting and elastomeric (with the ability to bridge possible cracks in the support). The membrane cures in a few seconds and its commissioning are in a few hours.

APPLICATION

- Coating of concrete or metallic pavements, always using a suitable primer.
- Protection of concrete structures on pavements, especially those exposed to the outside.

PROPERTIES

- Totally continuous, thermostable, flexible, and elastic membrane, with an excellent capacity to bridge possible cracks in the support.
- Extremely fast curing and commissioning.
- As it is a naturally aromatic membrane, if it is exposed to sunlight it is recommended to protect it with an aliphatic protective finish (Floortop 1k or the Kryptanate range) to maintain its aesthetic appearance over time.
- Bfl-S1 fire classification.

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical identity	Polyol / Polyamine	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Presentation	Metallic container: 186 kg Component C (color paste): 4 kg metallic container	Metallic container: 210 kg
Solids content	100%	100%
Flashpoint	>100ºC	>100ºC
Color	Yellow	Yellowish

Density	Temperature (ºC)	Density (g/cm³)	Temperature (ºC)	Density (g/cm³)
	25	1.05	25	1.12

Viscosity	Temperature (ºC)	Viscosity (mPa.s)	Temperature (ºC)	Viscosity (mPa.s)
	25	750	25	800

VOC Category (according to directive 2004/42/EC)	<2g/L, <0.2% A, j	0 A, j
A/B ratio	A=1, B=1.05 by weight A=1, B=1 by volume	
Density and viscosity of the mixture	Fast polymerization (see pot life time)	
Color	Brown-yellowish. Component A is pigmented by adding colour pigment for Rayston Floor D40 FR (Pigment Spray).	
Pot life	Gel time of mixture A+B (20 g) 8-9 s at 25ºC 4-6 s at 60ºC	
Storage and expiration	Store between 10º and 30ºC. Store protected from moisture. The product is hygroscopic. Component B may become cloudy after prolonged storage at low temperatures. In this case, it can be re-liquefied with gentle heating. Expiration: 12 months from its manufacture	

INFORMATION ABOUT THE FINAL PRODUCT

Final state	Elastomeric solid membrane
Color	Available colours: light grey, dark grey, rust red, blue (may darken during storage and exposure to sunlight). Other colours under request.
Hardness (Shore)	90A/40D (ISO 868)
Mechanical properties	Maximum elongation: 400% Maximum tensile: 10 MPa (EN-ISO 527-3)
UV resistance	Good membrane resistance to UV degradation. Aromatic polyurea undergoes color change under sunlight, but its mechanical properties are not impaired. Additional UV protection is obtained through an aliphatic finish such as Floortop 1k or Kryptanate.
Abrasion resistance	Taber, CS17, 1000c, 1kg: 25mg

Adhesion to various substrates

Surface	Adhesion (MPa)
Concrete (EP100 primer)	5.6
Steel (PU Activator primer)	3.6

Chemical resistance

Immersion test. Continuous contact. (0=worst, 5=best)

Agent	Conditions	Result
Distilled water	15d, 80ºC	5
Saltwater	5d, 80ºC	5
Gasoil	16d, 80ºC	5
xylene	7d, 80ºC	1
Ethyl acetate	7d, 80ºC	0
Isopropyl alcohol	7d, 80ºC	0
Sodium hydroxide (40g/l)	7d, 80ºC	5
Hydrogen peroxide (33%)	7d, 25ºC	4
Ammonia	7d, 80ºC	5
sulfuric acid (10%)	7d, 80ºC	4
Conc. hydrochloric acid	7d, 80ºC	0
Bleach	7d, 80ºC	4
Sulfamic acid (8.5%)	7d, 60ºC	4

SUPPORT REQUIREMENTS

To obtain good penetration and adherence, the support must always have the following characteristics:

1. Levelled.
2. Cohesive / compact with a minimum resistance of 1.5 N/mm² (pull off test).
3. Regular and fine appearance.
4. Free of cracks and cracks. If there are, they must be treated beforehand.
5. Sound, clean, dry, free of dust or remains of materials or loose particles, surface laitance and free of grease, oil, and moss.

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AMBIENT CONDITIONS OF HUMIDITY AND TEMPERATURE

The recommended support temperature for application is between 10ºC and 40ºC. If the temperature is higher than 45ºC, additional measures must be adopted following the manufacturer's instructions.

The humidity in the support must be less than 4% and, in the environment, less than 85%.

SUPPORT PREPARATION

Concrete supports must be mechanically prepared using abrasive blasting or scarifying to lift the surface and achieve an open pore.

The support is primed and levelled until a regular surface is achieved. Pointed irregularities are removed with a polisher. Remove all dust and loose material from the surface with a brush, broom and/or vacuum cleaner.

NOTE: if the existence of underlying moisture is suspected, and to avoid the appearance of blisters on the surface, contact technical department to discuss about the most helpful solution.

MIXING AND HOMOGENIZATION

Add the prescribed amount of pigment in component A and homogenize again at low speed for a short time. Excess agitation leads to undesirable moisture absorption. Recirculate the two components, at a temperature between 25-30ºC (maximum 40º) while they are heated to the prescribed application temperature.

APPLICATION/CONSUMPTION

Rayston Floor D40 FR can only be applied using spray equipment suitable for hot two-component systems.

The recommended temperatures are as follows:

- Component A: 65ºC
- Component B: 70ºC
- Hose: 65ºC

The pressure must be set between about 135 and 170 bar.

During the application it is convenient to verify the thickness of the layer and that the evolution of the curing is correct.

Rayston Floor D40 FR is applied at 2-2.5 kg/m^2, as a rule.

Wind speeds higher than 25 km/h can lead to problems of excessive fog cooling that affects reaction speed, mixing efficiency, surface texture, physical properties and "overspray".

Contact Krypton Chemical for more technical application details.

CURING TIME

Rayston Floor D40 FR becomes hard to the touch within seconds of application. Orientate values of the evolution of the Shore A / D hardness (2 mm, 15-20ºC, 50-60% rh)

Time	Hardness (Shore A/D)
10 minutes	74/27
20 min	77/29
1 hour	80/30
24 hours	88/35

REAPPLICATION

Usually, the necessary thickness is obtained in a single layer. If it is necessary to reapply, it is advisable to do so immediately after the first application. If a previous epoxy primer has been applied, apply Rayston Floor D40 FR only over the dry primer (approximately 8 hours).

COMMISSIONING

Under normal conditions (25ºC, 50-60% rh), the coating is resistant to raindrops in 15 minutes, and resists light foot traffic in 1 hour.

TOOL CLEANING

To keep the materials of the spraying machine (gun, joints, etc.) in good condition, cleaning the equipment with solvents is not recommended. Instead, a suitable plasticizer can be used. Component B must be completely cleaned from those parts exposed to air and replaced with the plasticizer.

FAQs

Problem	Ask	Cause	Solution
The product does not dry	Is the A/B ratio correct?	different pressures	Check and correct the operation of the machine
Bubbles or unclosed pores appear	Porous support?	lack of primer	Apply epoxy primer as a sealer before Rayston Floor D40 FR
Product does not cover	Horizontal support?	Little loaded product. lack of pigment	Apply a minimum of 1 kg/m^2. Homogenize component A well
¿Grey color becomes darker?	Will it be seen?	Reaction of components to UV light	Apply the last layer with an aliphatic product like pigmented Floortop 1k
Can it be applied unpigmented?		It is not recommended because the use of pigment helps to obtain a more uniform surface. Rayston Floor D40 FR is supplied by default with a pigment of your choice	

SECURITY

Rayston Floor D40 FR component B contains isocyanates. Always follow the instructions on the safety data sheet for this product and adopt the protection measures described therein. In general, adequate ventilation and/or respiratory protection for the operator (combined particulate and organic vapor filter) is mandatory, together with protective skin clothing. The product should be used only for its intended uses and in the manner prescribed. This product must be used solely for industrial and professional uses. It is not suitable for DIY type use.

ENVIRONMENT

Empty containers must be handled with the same precautions as if they were full. Consider the packaging as waste to be treated by an authorized waste manager. If the packages contain remains, do not mix them with other products without previously ruling out possible dangerous reactions. Remains of component A and B can be mixed in equal parts to convert them to an inert solid material but never in a volume greater than 5 litres at a time to avoid dangerous generation of heat.

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ADDITIONAL INFORMATION

The information contained in this TECHNICAL SHEET, as well as our advice, both written and provided verbally or through tests, are given in good faith based on our experience and the results obtained through tests carried out by independent laboratories, and without serving as a guarantee for the applicator, who should take them as merely indicative references and with strictly informative value.

We recommend studying this information in depth before proceeding with the use and application of any of these products, although it is especially advisable that they carry out "in situ" tests to determine the suitability of a treatment in the place, with the purpose and under the conditions specific to each case.

Our recommendations do not exempt the applicator from the obligation to know in depth the correct method of applying these systems before proceeding with their use, as well as to carry out as many prior tests as are appropriate if there is doubt about their suitability for any work, installation or repair, taking into account the specific circumstances in which the product is to be used.

The application, use and processing of our products are beyond our control and therefore under the sole responsibility of the installer. Consequently, the applicator will be solely and exclusively responsible for the damages and losses that derive from the total or partial non-observance of the use and installation manual and, in general, from the inappropriate use or application of these products.

This data sheet cancels previous versions.