KRYPTANATE SPRAY FLEX

Hybrid polyurethane-polyurea coating for surface protection

DESCRIPTION

Kryptanate spray flex is a hybrid polyurethane-polyurea system, composed of aspartic acid derivatives, which brings a moderate and adjustable reactivity, in contrast to usual polyfunctional amine based polyurea system. The high reactivity of traditional polyurea causes an extremely short gelling time and insufficient self-leveling properties. This affected to the final surface appearance.

Kryptanate spray flex offers the desired properties form industrial marine or construction applications along with a longer curing time. Additional benefits are a good curing time even a low temperatures, good adhesion properties and high corrosion resistance, which are important factors for a time and cost-saving process.

- Hard and resistant coating is achieved in only one coat.
- Two component, spraying machine applied.
- Aliphatic polyurethane. Non yellowing
- Good colour and gloss retention
- Nonflammable. No solvents
- Short and convenient curing time, even at low temperatures.
- Anticorrosive properties
- Good weathering resistance.
- Thick layer possible in a single application
- Ideal for new construction and refurbishment.

CERTIFICATIONS

Applus laboratory (independent). : Accelerated weathering test, corrosion, abrasion and slip. (exp. 09/100.059.649, 09/32301905, 10/1709-1863.

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Aspartic acid derivative polyamine	Aliphatic polyisocyanate
Physical state	Liquid	Liquid
Packaging	Metal container 186 kg / 19,2 kg	Metal container 192 kg / 20,8 kg
Non-volatile content (%)	97%	100%
Flash point	>100ºC	230ºC
Colour	light yellow	Colourless
Density		

Temp (ºC)	Density (g/cm3)	Temp (ºC)	Density (g/cm3)
20	1.08	20	1.17
60	1,02	60	1,06

Viscosity

approximate Brookfield

Temp (ºC)	Viscosity (.s)	Temp (ºC)	Viscosity (.s)
10	1000	10	10000
20	330	20	4000
30	150	30	1700
50	60	60	400

VOC content	35 g/L, 3%	0
VOC class	A,j	A,j
A/B mixing ratioat recommended application temperature	A=100, B=100 by volume	
Mixture properties	Fast polymerization (see pot life data)	
Mixture colour	Component A is pigmented prior to application by addition of Pigment Spray for Kryptanate spray flex, delivered separately. Note: spraying of unpigmented Kryptanate spray flex gives a translucent, non-transparent material.	
Pot life	Gelling time A+B mixture (20 g) 3 minutes at 25ºC 2 minutes at 60ºC	
Storage	Keep at temperatures between 10º and 30ºC.	
Use before	12 months after manufacture date.	

INFORMATION ON THE FINAL PRODUCT

Final state	Solid membrane
Colour	Depends on the chosen pigmentation
Hardness (shore)	55D
Mechanical properties	Maximum elongation: 130% Tensile strength: 14
Solid density	1,1 g/cm3
Chemical resistance	Surface contact, 24 hours, room temperature (5=ok, 0=not recommended)

Chemical	Result
Water	5
Sulphuric acid 10%	5
Sulphuric acid 30%	5
Sulphuric acid 50%	3
Isopropyl alcohol	3
Diesel	5
Sodium hydroxide (40gL)	5
Engine oil	5
Hydrogen peroxide 33%	5
Ammonia 3%	5
Methoxypropyl acetate	2
Xylene	0
Bleach	5
Skydrol	4

UV resistance	Aliphatic product.
Abrasion resistance	Taber: CS10, 1000g, 1000 cycles: 21 mg

SUPPORT REQUIREMENTS

In order to achieve a good penetration and bonding, support must be:
1.Flat and leveled (product is self-leveling)
2. Coct and cohesive (pull off test must show a minimum resistance of 1,4 N/mm2).
3. Even and regular surface
4. Free from cracks and fissures. If any, they must be previously repaired.
5. Clean and dry, free of dust, loose particles, oils, organic residues or laitance.

AMBIENTAL CONDITIONS

Support temperature must be between 10ºC and 40ºC. If higher, specific measures must be taken. Moisture support should be below 4%.Air temperature sholud be between 10ºC and 30ºC. Air humidity must be between 40% and 80%

SUPPORT PREPARATION

Concrete supports must be prepared and primed according to standard practice.

MIXING

Stir and homogenize both components using suitable stirring equipment. Add Pigment Spray to the A component as directed and stir before charging into the A-hood of the spraying machine. Charge B component into the other hood. Recirculate both components until application temperature is achieved.

APPLICATION

Kryptanate spray flex can only be applied using a 2-component- hot applied spraying equipment. Recommended temperatures are:

Component A: 55ºC
Component B: 65ºC

Approximate pressure 120bar.
During application it is advisable to check regularly layer thickness and curing rate.
Apply Kryptanate spray flex at 500 -1000 g/m2.

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Wind speeds in excess of 25 km/h may result in excessive loss of exotherm andinterfere with the mixing efficiency of the spray gun affecting polyurea surface texture, cure, and physical properties and will cause overspray issues.

Contact Krypton Chemical for more technical details regarding equipment and operating conditions.

CURING TIME

Kryptanate spray flex hardens after a few minutes. However, curing rate drops at lower temperature and lower humidity content.
Shore D hardness evolution (1 mm, 25ºC, 50%hr).

Time	Hardness
1 h	30
24 h	40
3 days	55

RE-APPLICATION

Under most conditions, required thickness is achieved in a single application. If a recoating is needed, it is strongly recommended to do it immediately afterwards. The longer the time gap between layers, the more likely interlayer adhesion difficulties can appear

RETURN TO SERVICE

At normal conditions (25ºC, 50% hr), membrane is light traffic resistant after one hour. For more demanding uses, waiting time will be longer.

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 cleaning fluid. Consult Krypton Chemical for advice on cleaning fluids.

SAFETY

Component B contains isocyanates. Always follow the safety instructions in the Material Safety Data Sheet. As a general rule, a good ventilation and/or respiratory protection is needed (combined organic vapor filtres+particles A2P2) 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 containes still have some material left, do not mix with other product with no knowledge of potential dangerous reactions. Component A and B may be mixed on a 1/1 ratio in order to get an inert material, but never do it in volumes larger than 5 litres in order 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” in order 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. In consequence, the installer will be the only responsible of any damage derived from the partial or total in-observation of our indications, and in general, of the inappropriate use or application of these materials.
This data sheet supersedes previous versions.