MAPEI

Resfoam 1 KM Flex

Ultra-fluid, flexible one-component polyurethane injection resin for waterproofing structures

DESCRIPTION
Resfoam 1 KM Flex is a one-component polyurethane injection resin, which when in contact with water, it forms a compact and flexible waterproof polyurethane foam. **Resfoam 1 KM Flex** is made up of special admixtures and an accelerator **Resfoam 1 KM Flex AKS** prepared according to a formula developed by the MAPEI Research & Development Laboratories.

Before using, **Resfoam 1 KM Flex** must be mixed with **Resfoam 1 KM Flex AKS** that, in direct relation to the used dosage (from 2 to 5% by weight of resin), has different reaction times, according to the needs on the job-site.
Due to its high fluidity, **Resfoam 1 KM Flex** penetrates into several hundred micron wide cracks and can seal them even if they are subject to water seepage. Once set, in seconds depending on the temperature and the amount of added accelerator, **Resfoam 1 KM Flex** ensures complete waterproofing of the treated area.

WHERE TO USE
- Waterproofing concrete surfaces and crackers masonry subject to water seepage, also under pressure.
- Waterproofing rocks subject to water seepage.
- Waterproofing permeable grounds saturated with water.
- Waterproofing tunnels subject to water seepage through cracks or cold joints between ashlars.
- Waterproofing wells or hydraulic structures that leak water through working joints or cracks.
- Repairing cracks in dams, canals and crest gates, even under the water bed.
- Sealing cracks in floorings or damp foundations saturated with water.

HOW TO USE
Sealing cracks by injection
Place the injectors: situate off set holes on the sides of the cracks. The size of the holes should fit the diameter of the injectors that will be used.

If there is no water seepage, normal metal or plastic pipes with a diameter of approximately, 10 mm can be used and can be fixed with **Adesilex PG1**.
However, it is necessary to inject water before injecting **Resfoam 1 KM Flex** in order to obtain an expanding reaction.

Preparing and injecting the product
Resfoam 1 KM Flex is mixed directly in its drum with approximately 2-5% of **Resfoam 1 KM Flex AKS** (10% if a very quick reaction is needed). After mixing, in the absence of damp or water, it can be injected for approximately 1 hour (it is necessary to protect the product from contact with damp air by covering the drum with its lid).

Note: *the reaction times vary depending on the percentage of accelerator added and the temperature*

Resfoam 1 KM Flex

TECHNICAL DATA (typical values)		
PRODUCT IDENTITY		
	Resfoam 1 KM Flex (resin)	**Resfoam 1 KM Flex AKS**
Colour:	yellow liquid	light yellow
Density at +25°C (ASTM D3505-96) (2000) (kg/l):	1,100	0.995 ± 0.003
Viscosity at +25°C (ASTM D4878-9898) (mPa·s):	2500 ± 500	12 ± 5
Inflammability point (ASTM D1310-86):	> 150°C	> 150°C
APPLICATION DATA		
Shore A hardness (ASTM D-2240-00):	60-65	
Traction resistance (ASTM D3574-03) (MPa):	3	
Reaction time:	initial growth: 20''-1' final growth: 1'-5'	

of the substrate to be injected. If after mixing with the accelerator, **Resfoam 1 KM Flex** *should not be protected from moisture, can be formed (within 30 minutes of preparation) on the surface a film of small thickness that still allows the use of the material.*

Inject **Resfoam 1 KM Flex** continuously into the crack. **Resfoam 1 KM Flex** increases its volume as soon as it is in contact with water sealing cracks and blocking water seepages. (after about 20-40 seconds as a function of a temperature and humidity).

Consolidating ground and rock

While injecting and when **Resfoam 1 KM Flex** is in contact with water, it increases in volume. This creates pressure on the ground components resulting in compaction. As a consequence, a polyurethane waterproof layer is formed, which varies in thickness, and permanently consolidates the injected material.

Cleaning

Tools used for injection must be washed with mineral oil or special solvents free from water and impurities.

CONSUMPTION

In open air, 1 kg of **Resfoam 1 KM Flex** + 0.05 kg of **Resfoam 1 KM Flex AKS** produces 40 l of expanded foam on contact with 0.1 l of water.

PACKAGING

Resfoam 1 KM Flex (resin):
20 kg metal drum.
Resfoam 1 KM Flex AKS (accelerator):
1 kg plastic drum.

STORAGE

Resfoam 1 KM Flex and **Resfoam 1 KM Flex AKS** products are extremely hygroscopic. They can be stored for maximum of 12 months in a dry sheltered place in its original sealed packaging at a temperature between +5°C and +30°C. Products that have been opened, must be used immediately.

RECOMMENDATIONS

To consolidate crackers concrete structures that are not subject to water seepage use **Epojet**. In cases of water seepage under strong pressure, increase the amount of **Resfoam 1 KM Flex AKS** up to 10% of the resin, also try or reduce the water pressure.
If the injection treatment is for structural consolidation, use **Foamjet F** or **Foamjet T**.

SAFETY INSTRUCTIONS FOR PREPARING AND APPLYING

Resfoam 1 KM Flex is irritant for the eyes, skin and respiratory tracks. It may also cause sensitisation if it comes into contact with the skin of those sensitive to isocyanates and irreversible damage if used for lengthy periods. At temperatures above +60°C the

product can give off vapors that may be harmful and cause sensitization if inhaled. In case of sickness, seek medical attention. During use, wear protective cloths, gloves and goggles, protect the respiratory tracks wearing a mask and work in well ventilated areas. If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention.
For further and complete information about the safe use of our product please refer to our latest version of the Safety Data sheet.

RESTRICTED TO PROFESSIONAL USERS.

WARNING
Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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All relevant references for the product are available upon request and from www.mapei.com

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