

INNO- CRETE

FOX INJECTION PUR FLEXIBLE FC415

Polyurethane Based High Performance Flex Injection Material

Description

FOX INJECTION PUR FLEXIBLE FC415 is a polyurethane based, high performance, flexible injection material developed for stopping water and filling cracks.

In compliance with EN1504-5 standard.

Fields of Application

- To stop water leaks in reinforced concrete structures, areas exposed to movement and dilatations,
- In filling and repairing works of building joints,
- To stop the water coming from the negative direction,
- To fill the gap around the mirror and repair the gaskets as material protective isolation at the TBM end,
- To stop water leaks from the joints of the tunnel segments,
- In membrane injection works used in tunnel constructions,
- In curtain injection works behind the tunnel segments,
- Used for stopping leaking water in tunnel coating concrete and diaphragm walls

Advantages

- Adheres well on wet surfaces.
- In joints or cracks, it takes the form of a flexible plug or gasket.
- Can be applied with the help of injection pump.
- Forms foam by reacts with water.
- The expansion factor is high.
- Economical.
- Does not contain solvent.

Technical Data

FOX INJECTION PUR FLEXIBLE FC410

Structure of Material	Polyurethane resin
Color	Brown
Density	1,19 g/cm ³
Viscosity	1100 mPa.s
Flash Point	>+200°C
Foam Effect (with 5 % catalyst)	25 - 30 times

FOX INJECTION PUR FLEXIBLE FC415 CAT.

Structure of Material	Isocyanate
Color	Light Yellowish
Density	1,08 g/cm ³
Viscosity	19 mPa.s
Flash Point	>+100°C

The above values are given for +23°C and 50% relative humidity. High temperatures shorten the time, low temperatures extend the time.



Application Procedure

Preparation of Substrate

The plaster on the surface should be removed so that the entire crack plane can be determined. The concrete surface to be treated should be cleaned from dust, oil and construction waste and damaged and loose concrete parts on the surface should be cleaned. If there is a water leak on the surface, it should be drained or closed with **FOX PLUG FC340**. Deciding on the width, depth and ambient conditions of the crack, holes must be drilled on both sides of the crack plane with appropriate intervals (~15 - 90 cm). These holes should be deep enough to pierce the crack plane and pass to the other side and be opened with an angle of approximately 45° with the crack plane. Dust and free particles should be removed by injecting air in the holes opened and the packers should be fixed by squeezing and driving. After all the packers are installed, the sealing should be provided by covering the perimeter of the packer and the crack with **FOX EPOMORTAR FC510**. In dry environment, water must first be squeezed into the packers, this will allow the water in the crack to react with the resin. According to the ambient and weather conditions, the injection process should be started at the earliest 12 hours later using the appropriate injection apparatus.

Application Method

In Environments Where Water Is Available

FOX INJECTION PUR FLEXIBLE FC415 is mixed with a catalyst of 2% to 10% depending on the desired reaction time. The mixture should be mixed with a suitable mixer and mixing tip until a homogeneous mixture is obtained. Before starting the mixture, make sure that the material temperature is between +15°C and +25°C.

In dry environments

- The required amount of water is injected into the regions where the water comes from by the help of a packer.
- **FOX INJECTION PUR FLEXIBLE FC415** is mixed with a catalyst rate of 2% to 10% depending on the desired reaction time. The mixture should be mixed with a suitable mixer and mixing tip until a homogeneous mixture is obtained. Before starting the mixture, make sure that the material temperature is between +15°C and +25°C.

The prepared **FOX INJECTION PUR FLEXIBLE FC415** mixture should be put into the single component injection pump chamber and injection should be started from the lowest level packer with a suitable pressure between 14 and 200 bar according to crack size, reinforced concrete thickness and general conditions. It should be understood that when the **FOX INJECTION PUR FLEXIBLE FC415** starts coming out of the upper packer, the air inside the crack is discharged and the injection material is filled in its place. After the injection hose is removed from the packer it is in and attached to the upper packer, the process similarly should be continued until the upper packer. When the material comes out of the upper packer, the application of the **FOX INJECTION PUR FLEXIBLE FC415** should be completed, assuming that the crack plane is filled with the injection material. At least 24 hours after application of **FOX INJECTION PUR FLEXIBLE FC415**, the ends of the packer can be cut for other applications to be applied to be surface.

REACTION	PUR FLEXIBLE FC 415	START OF REACTION	END OF REACTION	EXPANSION
at 5°C	1% Catalyzer	~2'22"	~9'56"	~7 V
	2% Catalyzer	~1'30"	~6'00"	~17 V
	5% Catalyzer	~0'35"	~2'58"	~24 V
at 15°C	1% Catalyzer	~0'44"	~5'00"	~9 V
	2% Catalyzer	~0'40"	~4'30"	~19 V
	5% Catalyzer	~0'20"	~2'10"	~24 V
at 25°C	1% Catalyzer	~0'22"	~3'56"	~9 V
	2% Catalyzer	~0'20"	~3'00"	~19 V
	5% Catalyzer	~0'15"	~1'08"	~25 V
at 30°C	1% Catalyzer	~0'18"	~2'50"	~10 V
	2% Catalyzer	~0'15"	~2'20"	~19 V
	5% Catalyzer	~0'10"	~0'60"	~25 V



Coverage

Variable

Watch Points

- Ambient temperature, humidity ratio and temperature of the water are the parameters affecting the catalyst usage rate during the application. Catalyst usage rate is determined by the trials made by considering these.
- Working and reaction times of resin based systems are affected by the ambient, ground temperature and relative humidity in the air. High temperatures accelerate hydration and the working time is reduced accordingly. Low temperatures slow hydration and prolonged working time.
- In order for the material to complete its curing, the ground temperature and ambient temperature to be applied must not fall below the minimum allowed value.
- Solvent etc. should not added into the mixture prepared during the application.
- Mixing must be done with the help of suitable mechanical mixers. Hand mixing should not be done.

Package

FOX INJECTION PUR FLEXIBLE FC415: 5 kg. plastic can
30 kg tin

FOX INJECTION PUR FLEXIBLE FC415 CAT.: 0,25 kg plastic bottle
1,5 kg plastic can

Shelf Life

Shelf life is 6 months from the date of production, when stored properly at room temperature, away from direct sunlight between +5°C to +30°C.

Storage

Should be stored in its original package, in a cool and dry place protected from frost. In short-term storage, maximum 3 pallets should be placed on top of each other and shipment should be made with the first-in, first-out system. In long-term storage, pallets should not be placed on top of each other.

Safety Precautions

It is dangerous to approach the storage and application areas with fire. Storage and application areas should be ventilated.

During the application, work clothes, protective gloves, goggles, masks in accordance with the occupational health and safety rules should be used. During storage and application, the material should not be contacted with the skin and eyes, if contacted, should be washed immediately with plenty of water and soap, and if swallowed, should be sought medical attention immediately. Foods and drinks should not be taken into the application areas. The material should be stored out of the reach of children.

For detailed information, please refer to the Material Safety Data Sheet.

Disclaimer

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