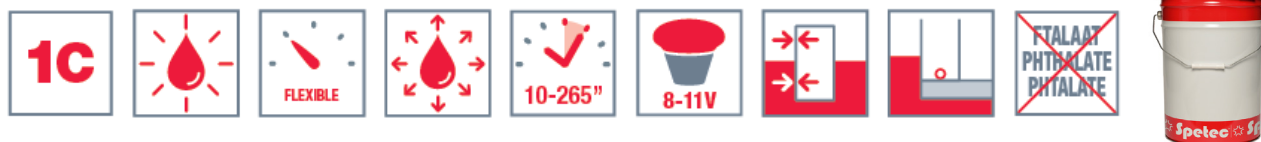




SPETEC® SEAL F400

LOW VISCIOUS, FLEXIBLE INJECTION RESIN FOR SEALING LEAKING JOINTS & CRACKS



Description

One component, closed cell, hydrophobic, water reactive, phthalate free, low viscosity polyurethane injection resin for stabilisation and water cut-off of large water leaks. In contact with water the SPETEC® SEAL F400 will expand and set as a permanent flexible water seal inside the crack or joint.

Advantages

- One component
- Different reaction times are possible by adjusting the percentage of SPETEC® Gen Acc. To get an even faster reaction, there is also a SPETEC® Gen Acc Fast accelerator available.
- Cured polyurethane is flexible, shrink-free and exhibits good chemical resistance (contact our Technical Service for more information).
- Cured polyurethane is harmless for the environment and resistant to biological attacks.
- NSF/ANSI/CAN 61-5 certified for contact with drinking water, or certified as a product to intended to form a barrier for drinking water.

Typical Applications

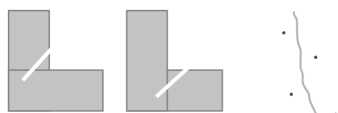
- Shut off water leaks in concrete, brickwork and sewers where movement and settlement may occur.
- Injecting very fine joints, cracks and micro cracks < 0.5 mm.
- Water cut-off of water leaks in foundations such as diaphragm walls, piling sheets and secant piles.
- Sealing water-carrying cracks and joints in tunnel segments.
- Curtain grouting behind tunnel, concrete, brickwork and sewer walls.
- Injection of water cut-off membranes and liners in tunnels.
- Injection of preventively placed injection tubes.

Application

Note : the following is a typical application description. In case of other job site parameters, please contact our technical department.

PRELIMINARY ANALYSES

For leaking joints, check how the joint runs into the construction. Injection holes have to be drilled into the joint. For leaking cracks, drill the injection holes in a zig-zag pattern around the crack to make sure that the injection hole intersects with the crack.



REQUIRED TOOLS

- Drill and drill bits of appropriate diameter and length
- Packers of appropriate diameter and length
- Injection pump; manual, pneumatic or electric.



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PREPARATION OF THE SUBSTRATE

Drill under an angle of 45° into the crack or joint. Ideally the injection hole should intersect the joint or crack about half way the thickness of the wall or slab. Blow the dust out of the injection hole. Fix a packer of the right diameter into the injection hole.

PREPARATION OF THE PRODUCT

Read the technical and safety data sheets prior to commencement of the injection works. Vigorously shake the SPETEC® Gen Acc or the SPETEC® Gen Acc Fast before use. Pour the required amount (2-10%) into the SPETEC® SEAL F400 resin. Mix the accelerator homogeneously into the resin and protect against moisture and rain to prevent premature reaction. Only prepare that amount of product that can be processed in one day.

PREPARATION OF THE EQUIPMENT

Depending on the application, injection can be carried out using a hand pump, pneumatic pump or electric pump. Always use a separate pump for injection of water and PUR resin. Check that the pump is working properly. Prior to injection, the pump must be flushed with SPETEC® PUMP CLEANER and be completely free of water to prevent pump blockage.

INJECTION

Start the injection at the first packer; for vertical joints or cracks this is usually the lowest packer. Do not over pressurise while injecting; the correct injection pressure is the pressure that allows to resin to flow into the crack or joint. Avoid injecting at pressures of more than 100 bars. If unreacted resin comes out of the joint or crack, stop the injection and move on to the next packer. After the last injection of resin into the packer, shoot a little bit of water into the packer in order to make sure that the last injected resin will react as well.

FINISHING

After injection, remove the packers from the concrete and fill the holes with a fast setting cement or any other appropriate filler material.

Application Conditions

Standard applicable between 1°C and 35°C. For applications outside these conditions, please contact our technical service. It is recommended to warm up the resin and accelerator in extremely cold conditions. Do not inject into substrates or sub-soils with freezing conditions where there is no liquid water for the resin.

Cleaning & Maintenance

After the injection, clean the pump with SPETEC® PUMP CLEANER. If the pump will not be used for several days, put oil into the pump and leave it there until the next usage. Never rinse the pump with water.

Complimentary Products

- SPETEC® PUMP CLEANER
- SPETEC® PACKERS & ACCESSORIES
- CERMIPLUG

Advice / Focal Points

Water must always be present during the injection of SPETEC® SEAL F400 as it is a water-reactive resin.



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Technical Data

Appearance

SPETEC® SEAL F400, uncured (Appearance: white liquid)		
Viscosity at 25 °C	Brookfield SP4 - 200 rpm	± 350 mPa·s
Density	EN ISO 2811-1	± 1.03 kg/dm ³

SPETEC® Gen Acc, Accelerator for SPETEC® SEAL F400 (Appearance: yellow - orange liquid)		
Viscosity at 25 °C	Brookfield SP3 / 200 rpm	± 75 mPa·s
Flash Point		156 °C
Density	EN ISO 2811-1	± 1.05 kg/dm ³

SPETEC® Gen Acc Fast, Accelerator voor SPETEC® SEAL F400 (Appearance: yellow - orange liquid)		
Viscosity at 25 °C	Brookfield SP3 - 200 rpm	± 70 mPa·s
Flash Point		156 °C.
Density	EN ISO 2811-1	± 1.05 kg/dm ³

Workability & Performance

SPETEC® SEAL F400 (with and without accelerator)	
State of the substrate / sub-soil	Wet or flowing water
Injectability – crack width	Min. 0.5 mm
Watertightness	Min. 2 x 10 ⁵ Pa

Reaction Times

SPETEC® Gen Acc Fast	5°C			15°C			25°C		
	Start	End		Start	End		Start	End	
2	70"	180"	9V	40"	120"	9V	30"	95"	9V
6	30"	75"	10V	20"	55"	10V	15"	45"	10V
10	17"	50"	11V	15"	40"	11V	10"	30"	11V

Consumption

Consumption has to be assessed on site and is influenced by the amount of water leaking, thickness of the concrete slab or wall, presence of voids in and around the concrete etc.



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Packaging

SPETEC® SEAL F400

20 kg Pails - 24 pails/pallet

200 kg Steel drums - 4 drums/pallet

SPETEC® Gen Acc

2 kg Plastic Bottles - 4 bottles/box - 44 boxes/pallet

20 kg Pails 24 pails/pallet

SPETEC® Gen Acc Fast 2 kg Plastic Bottles

4 bottles/box - 44 boxes/pallet

Storage & Shelf Life

SPETEC® SEAL F400 is moisture sensitive and should be stored in a dry area between +5 °C and +30 °C.

Shelf life of the resin: 24 months after production date, in original packaging.

Shelf life of the accelerator: 12 months after production date, in original packaging Once opened, containers should be used as soon as possible.



Warranties and Disclaimers

Hychem warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper use and application of the product by the applicator. Hychem has no role in the application of the finished polymer other than to manufacture and supply its components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of spray equipment and application of sol-gel materials. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Hychem and executed under seal by a company officer.

Field Support

Field support where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM are responsible for carrying out procedures appropriate to a specific application.

Customer Responsibility

The technical information and application advice given in this publication is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the product suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.