

SPETEC® PU H100

SEMI RIGID INJECTION RESIN FOR SEALING LEAKING CRACKS AND JOINTS



DESCRIPTION

One component, closed cell, hydrophobic, water reactive, solvent and phthalate free, low viscosity polyurethane injection resin for stabilisation and water cut-off of large water leaks. In contact with water the SPETEC® PU H100 will expand and set as a permanent water seal inside the crack or joint.

ADVANTAGES

- Single component
- Different reaction times are possible by adjusting the percentage of SPETEC® PU H100 ACC accelerator
- Cured polyurethane exhibits high strength and good chemical resistance (contact our Technical Service for chemical resistance)
- Cured polyurethane is harmless for the environment and resistant to biological attack.
- WQA drinking water certificate

FIELD OF APPLICATION

- Water cut-off of large flow and high pressure water leaks
- Water cut-off of water leaks in foundations such as diaphragm walls, piling sheets and secant piles
- Stabilisation and water cut-off of large cracks, voids and gravel layers
- Pre and post injections in mines, tunnels, pipe jacking, drill & blast and TBM applications
- Injections in combination with cement-based grout
- Crack and gravel layer injections in concrete structures
- Soil stabilisation and anchors in porous geology
- Water cut-off of sewer water leaks and sewer stabilisation
- Probe Grouting for below grade pipes
- Manhole Injections

APPLICATION

Note : the following is a typical application description. In case of other jobsite 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.



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® PU H100 ACC accelerator before use and add the required quantity (2-10%) into the SPETEC® PU H100 resin. Mix the accelerator homogeneously into the resin and protect against moisture and rain to prevent premature reaction.

PREPARATION OF THE EQUIPMENT

Depending on the application, injection can be carried out using a hand pump, pneumatic pump or electric pump.

Preferably use a separate pump for injection of water and PU resin. Check that the pump is working properly.

Prior to injection, the pump must be flushed with SPETEC® PU Pump Flush and be completely free of water to prevent pump blockage.

APPLICATION

- 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.
- Only catalyse the resin you will use within the next few hours.
- Do not let resin stay in the pump overnight.

REQUIRED TOOLS

Drill and drill bits of appropriate diameter and length

Packers of appropriate diameter and length

Injection pump; manual, pneumatic or electric.

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

COMPLIMENTARY PRODUCTS

For certain application where a faster reaction time is needed a special fast catalyst can be used.

Pump cleaner

ADVICE / FOCAL POINTS

Avoid injecting by temperatures below -20°C. In extreme cold conditions it is recommended to warm the resin and catalyst. Since SPETEC® PU H100 is hydro active, liquid water should be present.

TECHNICAL DATA

APPEARANCE

Yellow amberish resin

SPETEC® PU H100, uncured

(appearance: brown liquid)

| | | |
|-------------------|-------------|--------------------------|
| Viscosity at 25°C | EN ISO 3219 | ±160 mPa.s |
| Flash point | EN ISO 2719 | >150°C |
| Density | EN ISO 2811 | ±1.06 kg/dm ³ |

SPETEC® PU H100 ACC, Accelerator for SPETEC® PU H100

(appearance: yellow liquid)

| | | |
|-------------------|-------------|-------------------------|
| Viscosity at 25°C | EN ISO 3219 | ±15 mPa.s |
| Flash point | EN ISO 2719 | >150°C |
| Density | EN ISO 2811 | ±0.9 kg/dm ³ |

SPETEC® PU H100 + Accelerator cured

| | | |
|----------------------|-------------|-----------------------|
| Compressive strength | EN 12190 | >20 MPa |
| Tensile strength | EN 12190 | >2 MPa |
| Flexural strength | EN 12190 | >10 MPa |
| Density | EN ISO 1183 | ±1 kg/dm ³ |

REACTION TIMES

| SPETEC® PU H100 ACC | 5°C | | 15°C | | 25°C | | | |
|---------------------------|-----|-------|------|-------|------|-------|------|-----------|
| | % | Start | End | Start | End | Start | End | Expansion |
| | 2 | 55" | 300" | 42" | 170" | 35" | 110" | 15V |
| | 6 | 35" | 85" | 32" | 80" | 25" | 75" | 17V |
| | 10 | 25" | 65" | 22" | 60" | 18" | 50" | 18V |

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.

REFERENCE DOCUMENTS

SPETEC® PU H100 is WQA drinking water approved.

PACKAGING

SPETEC® PU H100 is packaged in 1000 kg IBC containers, 200 kg steel drums, 20 kg and 5 kg metal cans.

SPETEC® PU H100 ACC is packaged in 20 kg metal cans, 2 kg and 0.5 kg bottles.

STORAGE AND SHELF LIFE

SPETEC® PU H100 is moisture sensitive and should be stored in a dry area between 5°C and 30°C.

Shelf life of the resin: 24 months in original packaging.

Shelf life of the accelerator: 24 months in original packaging

Once opened, containers should be used as soon as possible.

SAFETY PRECAUTIONS

Avoid contact with eyes and skin, always use personal protective equipment in compliance with local regulations.

Read the relevant Material Safety Data Sheet before use. Material Safety Data Sheets are available on www.spetec.com

When in doubt contact Resiplast Technical Service.

Note: the information and recommendations provided in this technical data sheet is given in good faith and based on laboratory test and on the job experience of the manufacturer. In practice, site conditions and substrates might be such that the manufacturer cannot warrant the fitness for each individual purpose. The user of the product must test the product for its intended use and ascertain himself that the product will work under the specific conditions of the jobsite. The manufacturer does not accept any liability based on the content of the technical data sheet. The user must verify that he holds the latest version of the technical data sheet. The manufacturer reserves the right to change the properties of the product. Products must be properly stored, handled and applied in line with manufacturer's recommendations. Version 1.0 Date: 12 April 2018 9:24 AM