StenCare® 2IP-4

Water-Stopping Polyurethane Injection Foam

1. Product Description

StenCare® 2IP-4 is a solvent-free, two-component polyurethane-based injection material with a 1:1 mixing ratio. It rapidly hardens in contact with water, creates an impermeable foam and stops the leak.

2. Uses

StenCare® 2IP-4 is used to stop water ingress in underground structures and tunnel applications. Even after the two components are mixed, the material does not react until it comes into contact with water. **StenCare® 2IP-4** penetrates deeply, filling voids and cracks between layers with resin. On contact with water, it cuts off water flow by creating an impermeable and semi-flexible foam. It allows deep, long-reach injections.

Highlights

- Water-activated
- Low viscosity
- Slow gelling
- Good adhesion to concrete
- Low flammability
- Solvent-free; does not contain volatiles harmful to health (VOC=0)
- Safe application with low exotherm

3. Application

3.1. Application

StenCare® 2IP-4 is used by mixing at a 1:1 ratio by volume with a high-pressure, two-component injection pump. The product components are packaged at a 1:1 ratio. Before application, components A and B are inspected for signs of freezing or any contamination.

Frozen or contaminated products must not be used. The injection machine operates properly only when both components are homogeneous liquids. The two-component injection pump is fed with the A and B components of **StenCare® 2IP-4**.

Ensure each component is fed to the correct line. It is possible to mix both components and use a single-component injection pump if no two-component pump is available. In this situation the 4-hour pot life must be observed and extra care should be taken to make sure that all the equipment is dry.

If the injection machine pump and lines contain protective oil or similar liquids, material must be pumped until clean **StenCare® 2IP-4** comes out of the nozzle. The application must be started after making sure that the pump and lines are clean. During the application process, several holes are drilled into the substrate.

Gasketed, single-use injection packers are placed in the holes. Injection of **StenCare® 2IP-4** begins from the bottom packer. When material appears at the next packer up, injection is continued from that packer. When material appears at the topmost packer, the cavity is taken to be filled with polyurethane and injection is stopped. Especially for low-pressure applications, an injection head and static mixer are recommended. **StenCare® Quick IP-4** can be added to the system if faster curing is desired.

StenCare® Quick IP-4 must be added to component A and component A must be mixed before application.

3.2. Cleaning

The application machine must be carefully cleaned by pumping protective material through the pump and lines.

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4. Safety

Applicators and supervisors must read the Safety Data Sheet (SDS) carefully and follow the instructions provided. Emptied packages must be disposed of in compliance with relevant regulations and laws. The application must be carried out by skilled workers under the supervision of experts and the applicators must use all personal protective equipment required for the worksite and the task such as goggles, mask and gloves.

5. Storage

The material must be kept in dry indoor storage. The recommended storage temperature is 5-30 °C. Under these conditions, the material will retain its properties in unopened containers for 12 months from the production date.

Low temperatures may cause crystallization of the product; in this case, the product can be used after being warmed to +20 °C and homogenized. After prolonged storage, the product must be stirred thoroughly before use.

6. Disclaimer

This document is provided for general information and is based on **Stenkim®**'s laboratory data and field experience at the time of publication. **Stenkim®** reserves the right to revise this information without prior notice.

Stenkim® warrants that its products conform to the stated specifications on delivery. The buyer is responsible for determining the product's suitability for the intended purpose and for all conditions of transport, storage, application, and use. **Stenkim®** accepts no liability for results obtained under conditions outside its control. **Stenkim®**'s liability under this warranty is limited to replacement of non-conforming product and excludes any consequential or indirect damages.

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7. Technical Data

Property	Method	Result
Chemical Composition		Polyurethane resin and isocyanates
Solids Content (by weight)	EN ISO 3251	100%
Color		Amber
Density (Component A)	EN ISO 2811-2	0.99 kg/l
Density (Component B)		1.24 kg/l
Density (Cured Resin)		1.11 kg/l
Mix Ratio (A:B)		1:1 (by volume) 1:1.2 (by weight)
Pot Life		4 hours
Skin Formation Time @23 °C, 50% RH		15 minutes
- 5% StenCare® Quick IP-4		12 minutes
- 10% StenCare® Quick IP-4		10 minutes
Viscosity	EN ISO 3219	250 cP
Shelf Life		1 year
Packaging		66 kg plastic container sets, 460 kg drum sets or 2,200 kg IBC sets

Stenkim® reserves the right to make changes to the values in this table at any time.

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