

1. Product Description

StenCare® 2IP-3 is a solvent-free, two-component polyurethane-based injection resin with a 1:1 mixing ratio. With its quick setting property, it is used in mining and tunnel works for strata reinforcement.

2. Uses

StenCare® 2IP-3 is used in mining and tunnel applications for soil stabilization and for filling cracks in tunnel lining concretes and diaphragm concretes. When used as an injection material, it stops water leakage. Deep-penetrating **StenCare® 2IP-3** fills voids and cracks between layers with a high-strength, high-adhesion polyurethane resin.

If it encounters groundwater, it foams to fill the available volume and prevents future water leakage or collection.

3. Application

StenCare® 2IP-3 is used by mixing at a 1:1 ratio by volume with a high-pressure, two-component injection pump. Product packages are packed so that the components are 1:1. Before application, components A and B are checked against 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 injection pump is fed with components A and B of **StenCare® 2IP-3**.

Ensure each component is fed to the correct line. If the wrong component is fed, the gelled product may permanently clog the pump, lines and nozzle. If the injection machine pump and lines contain protective oil or similar liquids, material must be pumped until clean **StenCare® 2IP-3** comes out of the nozzle.

The application should 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-3** 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, injection is stopped, indicating that the cavity is filled with polyurethane.

In a mining application, the average pressure is around 150-200 bar. Lower pressures can be used in concrete or loose ground applications. Especially for low-pressure applications, an injection head and static mixer are recommended.

StenCare® 2IP-3 does not foam unless it contacts water. Where foaming is required, 3% water can be added into component A. Foamed resins have lower load bearing properties than non-foamed resins.

For further information, contact **Stenkim®**.

4. Cleaning

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

Hydrophobic Polyurethane Injection Resin

Highlights

- Hydrophobic polyurethane resin for soil stabilization
- Quick setting
- High tensile and compressive strength
- Excellent adhesion to various rock and substrates, and concrete
- Low foaming factor on water contact
- Low flammability
- No VOCs or hazardous emissions during use
- Safe application with low exotherm



5. Safety

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

6. Storage

The material must be kept in dry indoor storage. 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 heating and homogenizing at +20 °C. The product must be stirred thoroughly before use after prolonged storage.

7. Disclaimer

This document is provided for general information and reflects **Stenkim®**'s laboratory data and field experience at the time of publication. **Stenkim®** reserves the right to revise this information at any time without 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 application and for all conditions of transport, storage, handling, 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.



8. Technical Data

Property	Method	Result
Chemical Composition		Polyurethane resin and isocyanates
Solid Content	EN ISO 3251	100
Color		Amber
Density (Cured Resin)	EN ISO 2811-2	1.13 ± 0.05 g/cm ³
Mix Ratio (A:B)		1:1 (by volume) 1:1.2 (by weight)
Compressive modulus at 10% deformation		70 MPa
Compressive Strength		110 MPa
Adhesion to wet concrete		1.8 MPa
Hardness (Shore D)		82
Maximum temperature during cure (100 g)		141 °C
Shelf Life		1 Year
Packaging		66 kg plastic containers, 460 kg drums or 2,200 kg IBC sets

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

