

Silicajet EXP/4

Two-component organo-mineral fast reacting resin with a moderate foaming ratio

DESCRIPTION

Silicajet EXP/4 is a non-shrink two-component organo-mineral fast reacting resin with a moderate foaming ratio. It is a low viscosity fluid resin used for injections in all types of soil, rock and/or concrete.

WHERE TO USE

- Back-filling grout for segments in case of mechanized tunnelling.
- Waterproofing.
- Consolidating and void filling.
- Consolidating and stabilizing of the tunnel front in case of mechanized tunnelling.

TECHNICAL CHARACTERISTICS

Silicajet EXP/4, due to the high fluidity achieved on mixing the two-components, is well suited to waterproofing, consolidating and filling voids, fractures etc., in underground works where very high penetration is required in narrow spaces in all ground types.

Silicajet EXP/4 shows a very fast reaction speed, between 15 and 30" at environment temperature. The mass expansion ratio is at most 6 times the initial volume. This makes the product suitable for underground works where it is necessary to fill very narrow spaces, such as cavities in the ground and fractures in precast segments.

Silicajet EXP/4, thanks to the high fluidity, is suited to waterproofing, consolidating and filling of voids, fractures, etc. in underground works in a wide range of ground types, from rocks to incoherent grounds, up to alluvial deposits. The expansion ratio of **Silicajet EXP/4**, and therefore the consolidating performances of the resin, is related to the dimension of the cavity to be injected and above all to the injection pressure used.

The low polymerisation temperature as well as the property of being self-extinguishing, makes **Silicajet EXP/4** suitable to the uses in underground spaces, even of narrow and small size (mining tunnels, ecc).

Due to the special formulation of the product, the presence

of water or severe weather conditions do not influence the reaction of polymerisation and consequently the expansion of **Silicajet EXP/4**.

Once the two components reacted and generated foam this has a good adhesion to rock substrate, it is self-extinguishing, no toxic and no polluting. Foaming/hardening reaction takes a very few seconds but, either upon peculiar requirements or in presence of low application temperatures (lower than +15°C), it is possible to hasten by adding, into the **Silicajet EXP/4** component A, a small quantity (0.5-1% on weight) of a proper catalyst **Silicajet EXP/4 AKS**.

RECOMMENDATIONS

Both component A and component B must be accurately mixed before using, in order to obtain a homogeneous product and ready to use. **Silicajet EXP/4 component A** might be affected by a significant viscosity increase, when stored at low temperature.

HOW TO USE

Silicajet ST is a two-component product made of a resin (**Silicajet ST** component A) and a hardening accelerator (**Silicajet ST** component B) which must be mixed in a ratio of 1:1 by volume. The injection operation requires a two-component pump to mix the product properly, just prior to injection. It is strongly recommended to inject by using a worm screw (placed in the nozzle). It is recommended to avoid the product application manually.

CONSUMPTION

The consumption has to be assessed considering the ground conditions. Therefore, in order to enhance the **Silicajet EXP/4** usage and performance, we suggest you to contact our technical service **Underground Technology Team** for assessing the local conditions of application.

PACKAGING

Silicajet EXP/4 component A is available in 25 kg tanks

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

	component A	component B
Density (ISO 758) (g/cm ³):	1.460 ± 0.05	1.210 ± 0.05
Viscosity (mPa·s):	350 ± 50	250 ± 50
pH (ISO 4316):	11.5 ± 0.05	neutral
Colour:	yellow-reddish	dark brown
Mixing ratio:	100 + 100 parts in volume	
Application:	by injection, using adequate pumps with a worm screw installed on the nozzle and pressure up to 100 bar	
Reaction starts:	15-20 seconds at +20°C	
Reaction ends:	after 3-5 minutes	
Exothermic reaction:	max +95°C (for a mass of 200 g)	
Compressive strength (N/mm ²):	10-18, depending on the expansion ratio	
Storage:	1 year, in original sealed containers, stored in a fresh and dry environment, at a temperature between +5°C and +35°C	
Hazard classification according to EC 1999/45:	irritant harmful Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet	
Customs class:	3905 50 90	

and Silicajet EXP/4 component B is available in 21 kg tanks.

STORAGE

Silicajet EXP/4 can be stored for 12 months, in original sealed containers at a temperature between +5°C and +35°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Silicajet EXP/4 may irritate the eyes, skin and respiratory system. Component B is harmful and may provoke rashes in those who are sensitive to such products. While applying the product, we recommend the use of suitable personal protective equipment. Avoid inhaling the fumes given off by the product. In the case of accidental spillages, wash off with plenty of clean water and seek medical attention. For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

FOR PROFESSIONAL USERS.

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application: for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application: in every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our web site www.mapei.com

**All relevant references
for the product are available
upon request and from
www.mapei.com**

