

MINING / CONSTRUCTION / ENERGY

WilkitFoam T

TWO COMPONENT SILICATE RESIN SYSTEM

DESCRIPTION

Rapidly reacting, strongly expanding foam filler, suitable for spray-on application, CFC-free.

WilkitFoam T, Comp. A is a modified water glass, and component B is a modified isocyanate. At the bottom of the cans, some minor flocking may be observed, which does not affect the processability. Neither component contains any volatile organic compounds or plasticisers.

After mixing the resin starts producing carbon dioxide gas and water vapour within a few seconds, thus forming a light-weight foam. In free-rise foaming, the surface has a brittle touch in the beginning (“sanding off”), but after some hours, the foam becomes semi elastic throughout.

APPLICATION AND USE

This resin is designed for

- Rapid filling of cavities
- Consolidation and sealing in strata and soil
- Stopping of water intrusions
- Stabilisation of cavities caused by rock falls in tunnelling

Applicable at ambient temperatures between 10 °C and 40 °C.

At a product temperature < 10 °C flocculation can occur.

ADVANTAGES

- Resistant against water, diluted acids and alkaline brines
- Presence of water does not affect the reaction; the foam floats in water



TECHNICAL DATA

The data below are laboratory data. They may vary in practice due to thermal exchange between resin and strata, shear of the resin in cracks, pressure, and other factors.

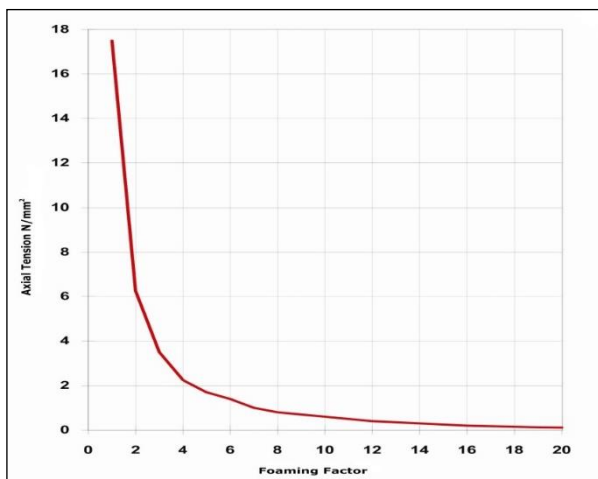
MATERIAL DATA

Details	Unit	WilkitFoam T Comp. A	WilkitFoam T Comp. B
Density at 25 °C	kg/m ³	1310 ± 30	1230 ± 30
Colour		colourless	brown
pH-Value		11	-
Flash Point	°C	-	> 170
Viscosity at 5 °C	mPa*s	43 ± 15	1440 ± 150
Viscosity at 10 °C	mPa*s	25 ± 10	930 ± 125
Viscosity at 15 °C	mPa*s	20 ± 10	560 ± 100
Viscosity at 20 °C	mPa*s	17 ± 10	370 ± 75
Viscosity at 25 °C	mPa*s	15 ± 10	220 ± 50
Viscosity at 30 °C	mPa*s	13 ± 5	160 ± 50
Viscosity at 35 °C	mPa*s	11 ± 5	110 ± 30
Viscosity at 40 °C	mPa*s	9 ± 5	40 ± 15

REACTION DATA

Starting temperature	Start of foaming	End of foaming	Foaming factor
5 °C	37 s ± 15 s	1 min 45 s ± 30 s	approx. 13
10 °C	25 s ± 15 s	1 min 20 s ± 30 s	approx. 18
15 °C	20 s ± 15 s	1 min 10 s ± 30 s	approx. 23
20 °C	15 s ± 5 s	50 s ± 20 s	approx. 25
25 °C	10 s ± 4 s	40 s ± 15 s	approx. 30
30 °C	8 s ± 3 s	35 s ± 15 s	approx. 35
35 °C	7 s ± 3 s	29 s ± 10 s	approx. 43
40 °C	5 s ± 2 s	25 s ± 10 s	approx. 60

MECHANICAL DATA



In order to examine the resistance character of the "Wilkit Foam T" system, specimens were manufactured from the plastic systems and stored for 18 months in four different fluids (deionised water, an acid solution with a pH-value of approx. 4, an alkaline solution with a pH-value of approx. 13 and a sulphate solution with 5.000 mg/l SO4-2) at a temperature of 45°C.

According to an established test plan, samples were taken after 3 and after 6 months and their compression strength and form changes were determined by examination. These tests and measurements served to establish whether and to what extent the properties examined are influenced by the storage conditions mentioned.

From the test results of the parameters examined, it can be concluded that there is no clear proof of damage to the material after a 3- or 6-month storage. In some specimens, there are signs for possible influence on the material by the storage as these specimens show length changes and slight losses in compression strength.

As the foaming factor is high, slightly worse results compared to a low-foaming system of a similar composition would have to be expected for a test period of 18 months.³

APPLICATION METHOD

The two WilkitFoam T components, A and B, are pumped via a dual component pump, e. g. Minova SK 90, at the volumetric ratio 1 : 1, then they are mixed passing a static in-line mixer prior to either free discharge from the injection pipe or being sprayed from a discharge nozzle. Thus, WilkitFoam T may be applied to vertical and overhead surfaces.

After leaving the mixer, the liquid resin shall not undergo major shear forces (flow through narrow cracks). This would lead to a decrease of the foam factor. Free discharge from a nozzle provides an optimum foam factor. If the rising foam is hit by a beam of liquid resin, the foam factor is decreased considerably.

For flushing the B-side of the pump, we recommend water free oil. For the A-side, however, we recommend water with a surfactant (e. g. dishwashing agent). Oil affects the formation of foam.

When WilkitFoam T is injected into wet soil, no compounds are released in traceable amounts. It meets the requirements of the German Institute for Construction Technology (DIBt) for the "Evaluation of the effect of building products on soil and groundwater".^{1,2}

The foam is predominantly closed cell. It is not soluble in water, acids or alkaline brines.

SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the general safety regulations when handling chemicals, see MSDS.

The recommended processing temperature is between 15 °C to 30 °C.

When the material is warmed up, local overheating, e. g. at the container wall, must be avoided by any means.

PACKAGING AND TRANSPORTATION

All forms of packing are approved to the danger goods regulation road, railway, domestic shipping.

The components can be delivered in 20/26/200/1000 l units.

Other packaging units are available on request. Details are shown in the offer.

STORAGE AND SHELF LIFE

At least six months from date of delivery of when stored in a dry place between 10 °C and 30 °C.

When this time is exceeded, we recommend having the material checked by Minova for compliance with specification.

Frost may damage the A-component (flocculation; consult Minova).

The local legislation on storage has to be observed.

DISPOSAL

Follow local regulations.

APPROVALS AND CERTIFICATES

1. Test report groundwater hygiene (Labo Consult Milano, 2002)
2. Test report on groundwater and drinking water compatibility DIBt data sheet (Hygiene-Institut, Gelsenkirchen, 2003)
3. Durability test of WilkitFoam T P 070301 (LPI Ingenieurgesellschaft mbH, 2008)
4. Report triaxial tests according to DIN 18 137 Part 2 (Erdbaulaboratorium Essen, 2006)
5. Test certificate gravel 8-16 solidified with WilkitFoam T (DMT Essen, 2010)

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ADDITIONAL DOCUMENTATION

- MSDS of WilkitFoam T

LIST OF REPRESENTATIVES

- AUSTRIA: Minova MAI GmbH
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- ITALY: Minova CarboTech GmbH Italy branch
- KAZAKHSTAN: Minova Kazakhstan LLP
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TECHNICAL DATA SHEET



- UNITED KINGDOM: Minova Weldgrip Ltd.;
Minova International Ltd.
- APAC: Minova Australia Pty Ltd.
- AMERICAS: Minova USA Inc.

CUSTOMER SERVICE

For additional support options available at your area, contact our local offices.

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