

MINOVA

# GEOFOAM

TWO COMPONENT EXPANDING SILICATE RESIN

## DESCRIPTION

GeoFoam is a rapidly reacting, strongly expanding two component injection resin with flame protection, CFC-free.

GeoFoam is a silicate based resin foam. Component A is a modified silicate, and component B is a modified isocyanate. After mixing in a volumetric ratio 1: 1 the resin starts foaming up within a few seconds.

## APPLICATIONS AND USES

- > For cavity filling
- > Consolidation of soil
- > For sealing
- > For securing soil on the surface
- > for water sealing
- > the product allows injection as well as spraying techniques

Applicable at ambient temperatures between 5 °C and 40 °C.

## ADVANTAGES

- > Allows application at lower temperatures
- > Reaction temperature comparable lower than these of Polyurethane systems
- > Fast reaction also against inflow of pressurised water

## TECHNICAL DATA

The data below is laboratory data only. It may vary in practice due to thermal exchange between resin and strata, surface properties of the stone, humidity, pressure and other factors.

## MATERIAL DATA

PARAMETER	UNIT	COMP A	COMP B	STANDARD
Density at 25°C	Kg/m <sup>3</sup>	1455 ± 30	1220 ± 15	DIN 12791-1
Color		brownis-turbid	brown	
Flash Point	°C	N/A	>200	DIN 53213
Viscosity at 25°C	cps	260 ± 80	140 ± 15	ISO 3219

## REACTION DATA

INITIAL TEMPERATURE	5°C	10°C	20°C	25°C	TEST PROCEDURE
Start of Foaming	60s ± 25s	25s ± 15s	23s ± 15s	20s ± 10s	MCT PV 10-303
End of Foaming	120s ± 25s	120s ± 25s	55s ± 25s	45s ± 15s	MCT PV 10-303
Foaming Factor	15 - 30	15 - 30	15 - 30	15-30	MCT PV 10-303

## MECHANICAL DATA

PARAMETER	DETAILS	TEST PROCEDURE (STANDARD)
Compressive strength of materials reacted in "open cup" after 24 h, 23 °C; 50 % rel. humidity	at foaming factor 10: 3.5 N/cm <sup>2</sup> at foaming factor 20: 2.2 N/cm <sup>2</sup>	DIN 4093
Reaction emission	TEP: 0.56 mg/m <sup>3</sup> MDI: < 0.001 mg/m <sup>3</sup> TCPP: 0.005 mg/m <sup>3</sup>	Hygiene Institut A137320a-06-WR
Foaming factor	at product temperature from 10 °C: 7 - 13 20 °C: 15 - 25	MCT PV 10-303
Reaction temperature	After 1 min: 98 °C after 10 min: 97 °C after 20 min: 88 °C after 60 min: 52 °C	DIN 22100
Fire class	B2 E	DIN 4102 DIN EN 13501-1
Smoke toxicity	CO <sub>2</sub> : 0.006 kg/m <sup>3</sup> CO: 0.0003 kg/m <sup>3</sup> HCN: 0.00002 kg/m <sup>3</sup> HL4	DIN EN 45545-2
Adhesion at 3 mm crack by a foaming factor of 3 - 4	after 0.5 hour: 6.0 N/cm <sup>2</sup> after 48 hours: 10.0 N/cm <sup>2</sup>	DMT U2032MIBS-G
Behavior in the groundwater	pH 7.5 (after the injection) very low TOC-values	Hygiene Institut C-145193-06-Bs
Solubility behaviour (3 month) in: Fresh water: Salt water: Acid solubility: Base solubility:	not soluble not soluble not soluble not soluble	LPI Ingenieurgesellschaft mbH P060502

## APPLICATION METHOD

Before pumping stir both components thoroughly.

The components are pumped by a dual component pump at the volumetric ratio 1 : 1; they are mixed thoroughly in a static mixer unit, prior to injection into strata via a packer installed in a previously drilled borehole.

After a short time, the resin mixture begins to foam, penetrates forward driven by the injection pressure into the rock and sticks not only in cracks but also in larger gaps, holes, permeable rough soil.

Recommended product temperature before use: 20 °C - 25 °C

## SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the usual precautionary measures for handling chemicals, see MSDS.

Application of cold product (5 °C - 10 °C) can lead to delay in the reaction time, to a smaller foaming factor and increased occurrence of reactions steams.

## PACKAGING AND TRANSPORTATION

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

The components can be delivered in 18/26/200/1000 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 respectively 18 months after production when stored in a dry place between 10 °C and 30 °C. Frost can damage the A-Component. If this time is exceeded, we recommend having the material checked by Minova for compliance with specification. The local legislation on storage has to be taken into consideration.

## DISPOSAL

Follow local regulations.

## APPROVALS AND CERTICATES

1. Assessment of the effects of construction products on soil and ground water C-145193-06-Bs (Hygiene Institut)
2. Durability test of GeoFoam P 060502 (LPI Ingenieurgesellschaft mbH)
3. Checking of the grout U2032MIBS-G (DMT)
4. Measuring report A-137320a-06-WR (Hygiene Institut)
5. GeoFoam smoke toxicity, 5659/19181 (BASF)

## ADDITIONAL DOCUMENTATION

- > MSDS of GeoFoam component A
- > MSDS of GeoFoam component B

## MANUFACTURER

### **Minova Ekochem sp.z o.o**

An ISO 9001:2015

Quality Management Certified Company

Certificate No. FM 686583



## CUSTOMER SERVICE

Europe, Poland

Minova Ekochem sp.z o.o

41-100 Siemianowice Śl. ul.Budowlana 10

+48 32 750 38 00

Email: [contact@minovaglobal.com](mailto:contact@minovaglobal.com)

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