



GEORT MIX PREMIUM

The proper installation of the borehole heat exchanger and the careful grouting of the borehole are the basic prerequisites for a perfect operation of a ground source heat pump system.

The proper installation depends on:

- ▶ the quality of the grouting material
- ▶ grouting technology

The VDI 4640 German guideline summarizes the main functions of the grout. A conclusive grouting of the annular space is only guaranteed if the borehole is grouted with a suitable suspension from the bottom upwards. When inserting the borehole heat exchanger, a pipe to the final depth is to be installed through which the suspension can be pressed.



This grouting must be carried out properly and carefully for several reasons:

- ▶ securing the heat transport from the rock to the heat carrier fluid during heat extraction or vice versa for heat injection,
- ▶ sealing the borehole to the surface to prevent contaminants from entering and to seal aquifers that may have been penetrated.

Recently the industrially fabricated and bagged backfilling materials are preferred, because of their high thermal conductivity.

CHARACTERISTICS

- ▶ especially designed for Borehole Heat Exchangers
- ▶ 25% BHE reduction
- ▶ excellent freeze-thaw stability
- ▶ high thermal conductivity
- ▶ easy processing
- ▶ mixer saver
- ▶ excellent product quality
- ▶ shrinkproof
- ▶ high compressive strength
- ▶ environmental friendly
- ▶ low water permeability
- ▶ 25 kg/bag

TECHNICAL DATA

Application	The GEORT MIX Premium was especially designed for the grouting of borehole heat exchangers and incorporate all favourable characteristics in one product.
Appropriate use area	May be used in any surface.
Mixing process	550 l water : 1000 kg GEORT MIX Premium. Please keep the formulation!
Processing time	After mixing process quickly.
Processing temperature	Processible from +5°C to max. +30°C
Density [before processing]	1400 kg GEORT MIX Premium / m ³
Density [after processing]	~1950 kg GEORT MIX Premium / m ³
Processing expansion	2%
Amount	715 l / t 17,9 l / 25 kg bag
Flow diameter	220 mm
Thermal conductivity	> 2,5 W/mK [after mixing]
Compressive strength	> 10,0 N/mm ²
Coefficient of permeability	< 10 ⁻⁹ m/s

Tools/ Equipment	GEORT MIX Premium can be mixed in almost all type of industrial mixer, but adding only water. The mixing time depends on the mixing system, but should be processed until proper homogenized.
Storage	In original packaging, without opening can be kept for at least 6 months.
Delivery	25 kg bag
Safety instructions	The product contains cement and reacts with humidity/water [alkaline chemical reaction]. Protection of skin and eyes is needed. After skin contact was immediately with plenty of water. In the event of contact with eyes immediately rinse thoroughly with water and consult a doctor. The GEORT MIX Premium is exempt from the specific labelling requirements of Ordinance of Hazardous Substances, but safety instructions are to be kept.
Disclaimer	The above data relate to tests under lab-oratory conditions with the usual metro-logical tolerances. The testing was done to obtain information about the basic suitability of the product in respect of the intended purpose.

The GEORT has two types of grouting materials:

