

GEROtherm®-REX

The version for completely
diffusion-resistant geothermal probes
with protective layer

The version for completely diffusion-resistant geothermal probes with protective layer GEROtherm®-REX geothermal probe prevents gaseous substances from penetrating into the heat carrier. GEROtherm®-REX thereby guarantees the correct operation of the heat pump and protects it against damage caused by degassing.

Initial situation

As a material, polyethylene is not diffusion-resistant. Even the smallest amounts of gas can diffuse through the wall of the pipe. The gas is absorbed by the liquid (heat carrier) and is transported to the heat pump by the circulation of the liquid. Pressure is reduced by the difference in depth in the geothermal probe, which allows the gases to degas. The gas bubbles collect at the highest part of the primary circuit. This generally takes place in the heat pump, which can significantly disturb the operation of the heat pump and cause irreparable damage to it.

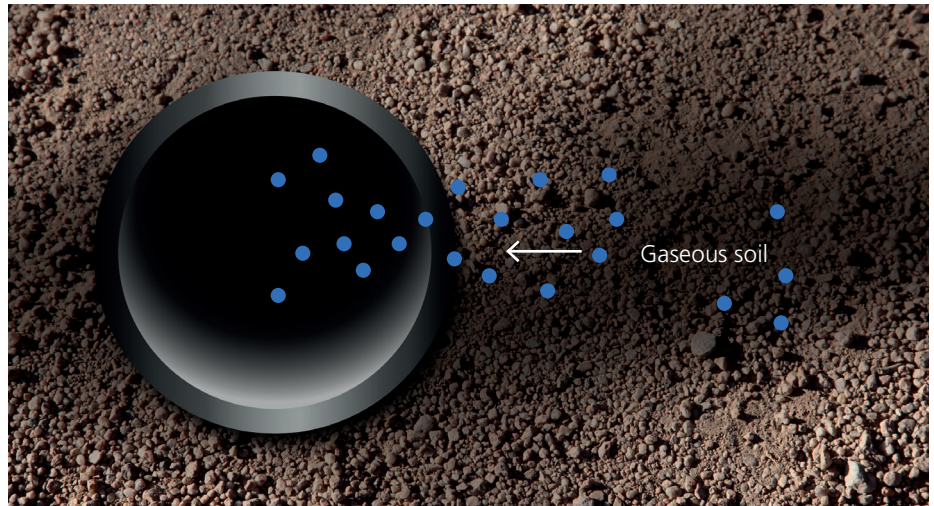
Product

The version for completely diffusion-resistant geothermal probes GEROtherm®-REX with protective layer prevents the penetration of gaseous substances. The core pipe, which carries the medium, is made of state-of-the-art crack-resistant PE100-RC and is certified and monitored by SKZ and KIWA KOMO. The pipe's diffusion resistance is achieved by using a polymer-matrix film with an integral diffusion barrier. It also features a scratch-resistant protective layer for mechanical protection.

The diffusion barrier on the tried-and-tested HakaGerodur probe foot is provided by a vapour-deposited metallic film layer. The additional protective lacquer coating provides a high level of abrasion resistance. The geothermal probe is compatible with the products from the GEROtherm® system range and guarantees long durability on account of its good corrosion and chemical resistance. This innovation is patented; Patent No. EU 3 450 878

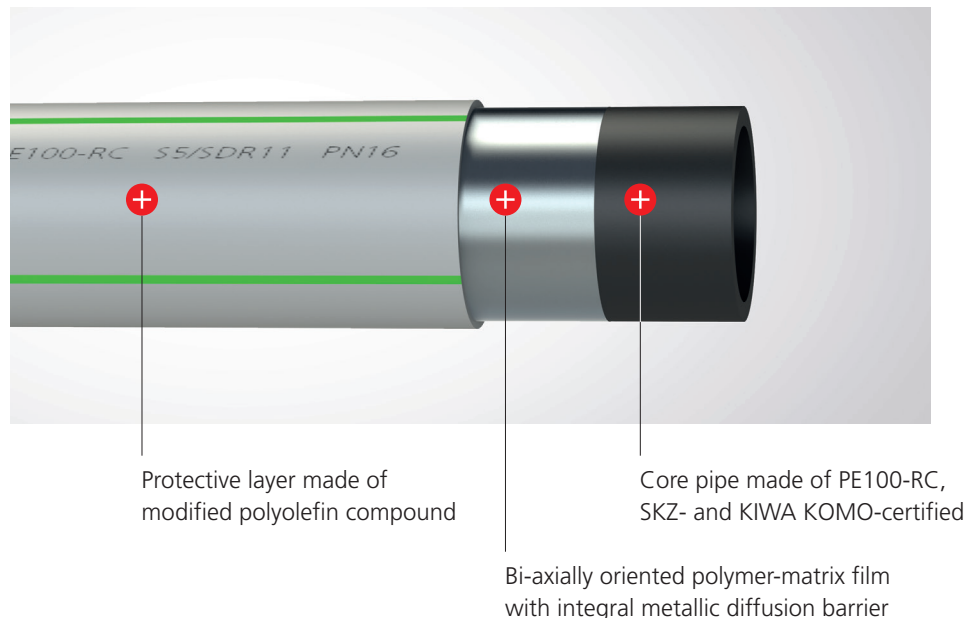
Certification

The core pipe of the GEROtherm®-REX geothermal probe is certified and monitored: SKZ certificate No. A278
KIWA KOMO certificate No. K84665/02



1 Gases diffuse through the pipe wall into the heat transfer fluid and are transported to the heat pump

2 Pipe construction



3 Probe foot with vapour-deposited metallic film layer and protective lacquer coating

SIA 384/6

A diffusion resistance value is considered to be a weighted value over the probe foot with 20 m of probe pipes and additionally the proportional length of any transition pipes with $< 0,50 \text{ cm}^3 / (1 \text{ m}^2 \times d \times 1,0 \text{ bar})$ ($d = \text{day}$). GEROtherm®-REX geothermal probes are well below this limit value.



Installation

The geothermal probe is delivered on a pallet. It can be installed using conventional equipment. The geothermal probe is compatible with all installation aids, such as GEROtherm® PUSH-FIX, UNI-FIX, weight system, etc.

Conclusion

The diffusion-resistant GEROtherm®-REX geothermal probe is recommended for gaseous soil. It ensures risk-free operation of the geothermal probe system and protects the heat pump from irreparable damage. GEROtherm®-REX is a quality product that guarantees outstanding safety and durability.

The version -REX is available for the probe types DUPLEX, **VARIO** and **FLUX**.



4 Complete GEROtherm®-REX geothermal probe designed as a 40 mm single-U



5 Standard cast weight fitted to the probe foot



6 Flow direction arrows and metre marks on both sides similar to standard probes.



7 GEROtherm®-REX in the drill hole with the drilling rig in the background

Advantages at a glance

- ⊕ Completely diffusion-resistant geothermal probe
- ⊕ Installation conditions similar to those for standard probes
- ⊕ Use of conventional tools
- ⊕ Virtually the same drill hole resistance as with standard probes
- ⊕ Protective layer for safe sinking with increased risk of scratching
- ⊕ SKZ- and KOMO- certified and monitored
- ⊕ Protected technology and guaranteed quality: Brevet no EU 3 450 878
- ⊕ Compliance with diffusion tightness in accordance with SIA 384/6



8 The final metres when sinking a total of five double-U40 mm GEROtherm®-REX probes into the drill hole, each 152 m in length



Geothermal with system



certified and monitored by



- + GEROtherm® **FLUX**, the conical, safety- and pressure loss-optimised geothermal probe
- + GEROtherm® **VARIO**, the conical, pressure loss optimised geothermal probe
- + GEROtherm® **DUPLEX**, the standard geothermal probe
- + GEROtherm® **-RT**, the version for geothermal probes for higher temperature and stress crack resistance made from PE100-RT-RC
- + GEROtherm® **-REX**, the version for completely diffusion resistant geothermal probes with protective layer
- + GEROtherm® accessories, weights, manholes, distributors and installation aids

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