



Hydraulic Engineering Geotechnics Geothermics Measuring Technology

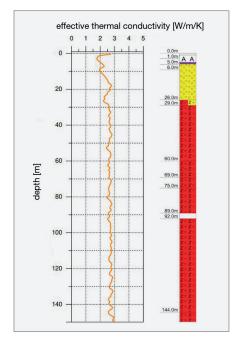
#### Geothermics division

# **GTC Kappelmeyer® in Geothermics**

#### The Brand GTC Kappelmeyer®

In January 2017 the company GTC Kappelmeyer® was integrated into the Solexperts group. As the independent brand GTC Kappelmeyer® we offer from the location in Karlsruhe besides the previous measuring technology in the field of thermal leakage detection, all services of the Solexperts group. They include distributed fibre optic temperature measurements and distributed fibre optic strain measurements. Our therefore patented Temperature Sounding Method is used worldwide for hydraulic engineering, civil and underground engineering, landfill construction and pipeline construction.





#### **Our Services**

Determination of geothermal parameters: thermal ground parameters, thermal conductivity, borehole resistance. We offer:

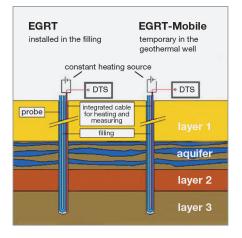
- EGRT
- EGRT-Mobile
- Short-EGRT
- Temperature monitoring (with automated alarming)
- Calculations of profitability for deep geothermics

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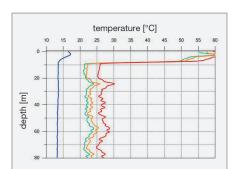
## EGRT

Temperature-depth-profiles are generated with temperature measurements during the heating and the cooling phase of a heatable hybrid cable along a geothermal probe. Depth-dependant thermal ground parameters (thermal conductivity and borehole resistance) are determined.

PERT

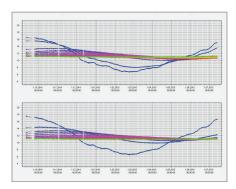
## EGRT-Mobile

For a mobile measuring setup with reusable measuring cables, a measurement of depth resolved thermal conductivities in already deployed geothermal probes is possible. Imperfections within the backfilling around the geothermal probes can be located. The EGRT-Mobile is performed with a special heatable EGRT-Mobile cable (glass fibre copper hybrid cable) and a DTS temperature measurement device. The measurement principle and the mathematic description are similar to the ones of an usual EGRT.



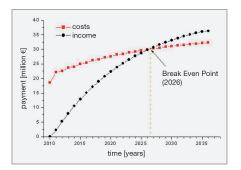
## Short-EGRT

The examination of the extension of existing geothermal probes can be realised in less time compared to an usual EGRT. The Short-EGRT is used in combination with the EGRT-Mobile-System in order to localise imperfections within the backfilling around geothermal probes and to provide evidence of possible hydraulic short circuits between different aquifers.



## **Temperature Monitoring**

An individual permanent online monitoring system can be installed for the surveillance of geothermal fields, e.g. energy pile systems and geothermal probe fields. Thereby, current and long term temperature changes are visualised and critical temperature changes can be indicated by automatic alarms.



## **Calculations of Profitability**

We offer calculations of profitability and sensitivity of different types of plants and reservoirs for the planning and the operation of a geothermal plant. The software unites all geophysical and engineering plant sections as components together in an overall model.