

GTC Kappelmeyer® in Geotechnics

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.

Temperature leakage detection was applied since 1997 in more than 200 sealed excavation pits around Europe.



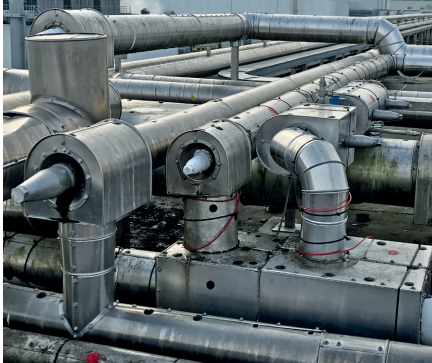
Our Services

- Thermal leakage detection in excavation pits, landfills, diaphragm walls and sealing systems (e.g. geomembranes)
- Thermal leakage detection on pipelines (e.g. district heating pipelines, ammonia pipelines, gas-, water- and sewage pipelines, penstocks)
- Monitoring of the curing temperature in concrete
- Fibre optic temperature monitoring of ground freezing (e.g. for shaft construction and tunnelling works)
- Determination of effective thermal conductivity (via Heat-Pulse- and Frost-Pulse-Method)



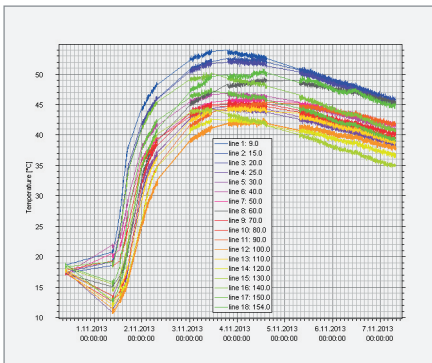
Thermal leakage detection at construction sites

Artificial seals secure dry conditions within building pits and their impermeability can be reliably monitored by leakage detection with the Temperature Sounding Method.



Thermal leakage detection on pipelines

Leakage of underground pipelines can be located with the ground temperature measuring technology quickly, cheaply and without traffic disruptions. During the installation of new pipelines, glass fibre cables can be laid along cheaply and distributed fibre optic temperature measurements can be implemented. This creates a temperature profile along the whole cable. Leakages can be detected automatically. Additionally, pipelines that are not underground can be monitored with fibre optic measuring cables as well.



Monitoring of the curing temperature in concrete

Hydration heat is released during the curing of concrete and this results in an increase of the structure's temperature that subsides slowly. The development of hydration heat is monitored cheaply and reliably with fibre optic temperature measurements. The occurrence of thermal stresses and the potential formation for cracks becomes predictable.



Temperature monitoring of ground freezing

Observation boreholes for temperature measurements are installed in order to monitor the development of ground freezing. With the precise fibre optic temperature measurements, the high resolution of measured values within the borehole and temperature differences can be visualised spatially. An optional alarming system that is activated automatically for deviations from a reference temperature can be set.



Determination of the effective thermal conductivity

Leaks in sealing systems can be located with the Heat-Pulse- and Frost-Pulse-Method (HPM/FPM). Thermal parameters like the effective thermal conductivity are determined in situ and then set into comparison with the depth.