

M-TEC CO₂-HEATPIPE

In contrast to a conventional brine depth probe, no circulation pump for the source side is required due to self-circulation of CO₂ and thus achieving a 25% higher efficiency.

The self-circulating CO₂ heatpipe was developed by M-TEC in 1999. The CO₂ depth probe is protected throughout Europe by a utility model and a patent. More than 5,000 probes have already been successfully installed.

DESCRIPTION OF A CO₂-HEATPIPE

In the M-TEC CO₂ heatpipe, CO₂ (carbon dioxide) is used as a heat transfer carrier.

The CO₂ probe works according to the heat pipe principle. In the probe tube there is both liquid and vapor-shaped CO₂. The liquid carbon dioxide is located in the lower part of the probe, the vapor-shaped in the upper area. By absorbing the geothermal heat, the liquid CO₂ evaporates, thereby rising and dissipating the geothermal heat in a heat exchanger to the refrigerant of the heat pump.

The CO₂ becomes liquid again due to this heat dissipation and automatically flows down again in the probe tube. The soil heats the CO₂, causing it to evaporate and rise again. This creates a continuous cycle.

ADVANTAGES:

Environmentally friendly

- natural heat carrier, no antifreeze
- Use also possible in water conservation areas

Maintenance

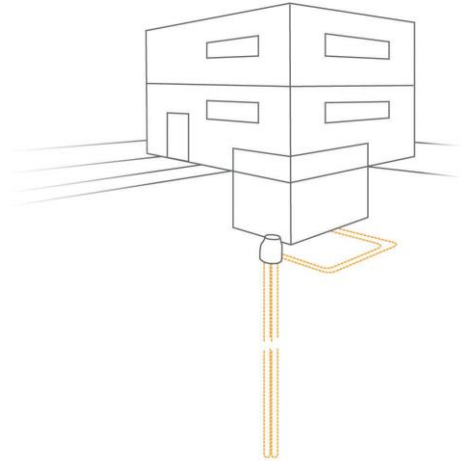
- self-circulating probe system
- no additional pump required

Low operating costs

- no energy costs for pump
- high customer satisfaction

Minimum space requirements

- ideal even for refurbishment
- requires only 2.5 m² of surface per hole



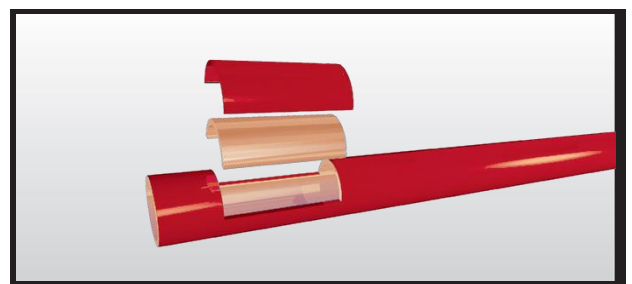
M-TEC COPPER-HEATPIPE

The copper heatpipe is characterized by excellent sliding properties for easy insertion into the borehole. In addition to environmental friendliness, another positive feature is the very good thermal conductivity when used for this system.

ADVANTAGES:

Cost & time savings due to

- long service life
- high security
- Efficiency in operation



Structure of the CO₂-copper probe tube

Probe lengths

60 / 70 / 80 / 90 m

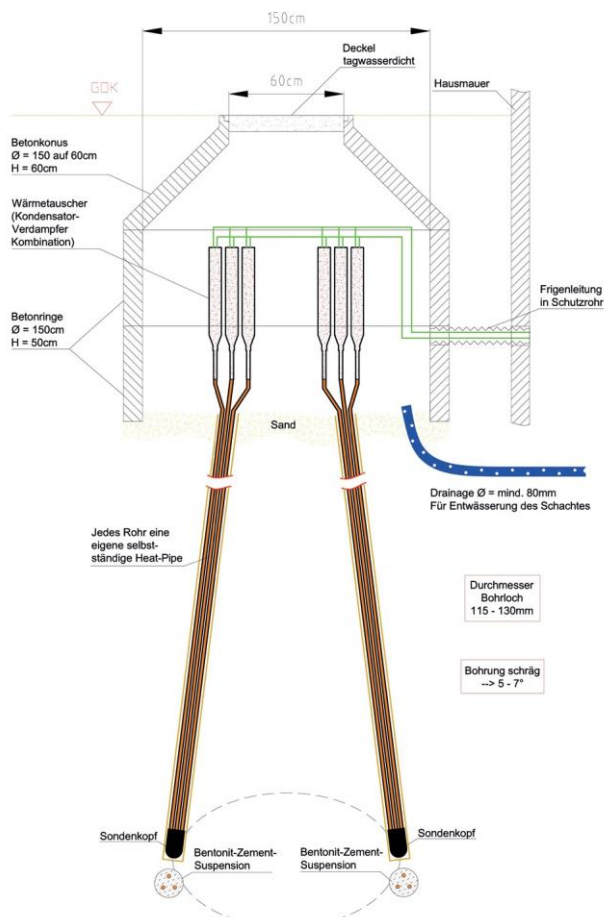
DRILLING TECHNOLOGY FOR CO₂ HEATPIPE

The geothermal deep drilling is an economically and ecologically highly efficient source of almost inexhaustible thermal energy.

DEEP DRILLING TECHNOLOGY

We work with competent partners who are specialists in the area of advice, analysis of soil and rock conditions and for the corresponding drilling technology.

A team of specialists is available to ensure rapid and smooth implementation, especially when dealing with the authorities.



1. Drilling



2. Pressed Borehole



3. Well with CO₂-Probes



4. Shaft closed

