



GEOKOAX[®]
geothermal systems

Pressure Test of a GEOKOAX GSHE

November 2017

Pressure Test of a GEOKOAX GSHE

Preparations

1. Fix a ball valve to the GEOKOAX probe return line (Ø 40 mm) and a second ball valve to the purge pipe (Ø 25 mm) and close both. The return line of the probe is a 50-to-40 fitting on the probe head.
2. Connect the pressure pump equipped, with a pressure gauge, to the GSHE feed pipe (Ø 40 mm). The feed pipe is a 40-to-40-fitting on the probe head.
3. Open the ball valve of the GEOKOAX probe return line (Ø 40 mm).
4. Pump water through the GSHE feed pipe (Ø 40 mm) with the pressure pump until the water flows out of the GEOKOAX probe return line (Ø 40 mm). Then, close the ball valve of the GEOKOAX probe return line (Ø 40 mm).
5. Open the ball valve of the purge pipe (Ø 25 mm).
6. Pump water into the GSHE feed pipe (Ø 40 mm) until the water flows out of the purge pipe (Ø 25 mm). Then close the ball valve of the purge pipe (Ø 25 mm).

Pressure Test

1. Fill water into the GEOKOAX GSHE until completely filled to vent the probe. Then, pump as much water into the probe until the pressure reaches 4 bars in the probe.
2. Close the pressure pump valve and wait 15 minutes. The diameter of the GSHE can expand up to 3 mm and the pressure can decrease to approximately 2.5 bars.
3. Rebuild the pressure to 4 bars with the pressure pump and wait 15 minutes. The pressure will decrease more gradually than the first pressurization.
4. Finally, rebuild the pressure to 4 bars again and relieve the pressure immediately after to 2.0 bars. The pressure in the GEOKOAX GSHE will remain constant in this state. Note that the pressure may increase by up to 0.2 bars. If the pressure remains constant for 15 minutes, the pressure test is successfully completed (tolerance of up to 0.2 bars).

Please refer to the notes on filling the probes before pressurization

Filling the GSHE probes:

1. The individual GEOKOAX GSHE are filled with the approved brine fluid (we recommend coracon® GEKO N, coracon® GEKO AF-8 or coracon® GEKO W) through the GEOKOAX GSHE return line (Ø 40 mm).
2. The heavier brine fluid displaces the lighter water out of the GEOKOAX GSHE feed pipe (Ø 40 mm) and the purge pipe (Ø 25 mm).
3. When the brine fluid starts flowing through these vents, the GEOKOAX GSHE is completely filled. As soon as all GEOKOAX GSHEs have been filled with brine fluid, they can be connected to each other.

Note:

We recommend filling each GEOKOAX GSHE individually because of their large individual volume. Filling the connected GEOKOAX GSHEs may lead to a different dilution ratio of the brine fluid and water.