

## THERMOCEM<sup>®</sup> PLUS

Backfilling the residual annular space around a geothermal probe requires a material with good flow properties that is stable in volume and sets hydraulically. The backfilling material to be used should exhibit thermal conductivity of  $\approx 2.0$  W/mK and high resistance to alternating frost-thaw conditions.

To ensure the quality of the seal in different water tables, the material must achieve a  $k_f$  value of  $\leq 1 \cdot 10^{-10}$  m/s at all times, even after the frost-thaw test with water contact. The backfilling material should be capable of being used in areas subject to water protection (water protection zones classed I and II in Germany) and demonstrate good resistance to groundwaters which attack concrete, as is the case with ThermoCem<sup>®</sup> PLUS.

### Mix ratio:

ThermoCem <sup>®</sup> PLUS	810 kg /m <sup>3</sup>
Water	650 l /m <sup>3</sup>

### Manufacturer:

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The backfilling operation is to be performed using a jointly-sunk injection pipe as an underwater concreting process, from the lowest point in the borehole to the point from where the hole has been sunk, in an uninterrupted process. Backfilling is only successfully completed if the density of the suspension emerging at the drilling point matches that indicated in the manufacturer's data sheet. The injection pipe is not to be removed and is to remain in the borehole. A filling log is to be completed in all cases for each borehole.

For the material to be incorporated, the result of the respective test of suitability, the technical data sheet with details of strength,  $k_f$  value, and mix ratio and the hygiene certificate of the backfilling material is to be submitted, so that the check on documentation and approval of the respective construction material is possible prior to installation.

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The above data relate to tests under laboratory conditions with the usual metrological tolerances. These along with records of other "suitability tests" are designed to obtain information about the basic suitability of our product in respect of the intended purpose. Even in the case of a project-specific test, the information should not be regarded as a promise of properties with the effect that we can be held responsible for damages resulting from the absence of features and/or properties. Our information therefore does not release customers from the obligation to carry out their own specific tests and take decisions on their own responsibility.

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