

STÜWAPRESS F – 10

Frost-proof geothermal sensor pressing material

In the growing market of the geothermal sensor heat pump installations, the demand for frost-proof pressing materials is increasing, since a frost-proof liquid is used as circulating heat transfer medium. It is easily possible to cool down the liquid to -10°C, for instance, with the help of the heat pump, which occurs often in top heating periods (end of the winter season) or with too small installations. This means that geothermal sensor installations are often exposed to alternating freezing/melting processes, which can cause cracks or even the destruction of the filling material through the course of time.

Thanks to the pressing material STÜWAPRESS F-10, which was optimised from a low-temperature point of view, these installations are equipped with a sufficient frost buffer. With the help of extensive alternating freezing/melting tests and subsequent simulation studies, the mixture of the pressing material was optimised such that the material can be said to be frost-proven up to -10°C. For most of the geothermal sensor installations, this range is sufficient, since the temperature of the circulating medium will not fall under -5 to -8°C, even under unfavourable circumstances. This is a wide enough range, if one also considers that the tests still showed positive results up to -20°C.

The material consists of a clay/quartz flour/cement combination and is mixed with water without adding further components.

The used blast-furnace cement is a safe component with regard to the hygienic requirements of the drinking water industry.

Characteristics:

W/F value [-]	0,6
Suspension density [g/cm ³]	1,6
Sedimentation value [% by volume]	< 1
Heat conductivity [W/m/K]	1,5
March time [l/min]	0,37
28 days burst strength [N/mm ²]	1,76

Recommended mixture per m³ of suspension:
 1000 kg STÜWAPRESS F-10 plus 600 litres of water

