

POWERCRETE® AND CABLECEM

Bedding and backfilling materials for
underground high-voltage cables

HEIDELBERGCEMENT



OPTIMISING CURRENT FLOW USING: POWERCRETE®



POWERCRETE – FOR MORE POWER IN THE LINE

HV and UHV cables are frequently built as underground cables. The reasons for this are the reduced need for land area, considerable savings on energy, and the absence of impairment to living areas by pylons. The problem with underground cables lies in the massive generation of heat as the load of the electricity lines is increased. As the cable temperature increases, so does the resistance, resulting in increased capacity loss. Improved power capacity can be achieved using bedding and backfilling materials like Powercrete and CableCem which dissipate the heat being generated into the surrounding soil.

Powercrete is a high-performance heat-conducting concrete, used as a bedding and backfilling material for underground HV and UHV cabling. The special material properties of Powercrete result in low heat transmission resistance. Because of the low thermal resistance, the heat being generated is dissipated effectively, the conductor temperature is reduced efficiently, and as a result the power capability of the cable route is increased.

The consistency of the Powercrete material can be adjusted. For instance, a free-flowing material consistency produces optimal embedding of cables, at the same time requiring low expenditure on compaction.



↑ Powercrete is used in the open ditch



↑ A Powercrete application

PRODUCT ADVANTAGES

- Improved heat dissipation for HV and UHV cables
- High heat conduction also after drying up
- Reduction of the magnetic field strength in the cable route area through cable bundling possible
- Increased power capacity possible
- Reduction of conductor cross-section area possible
- Switch to aluminium conductors possible
- Mitigation of “hot-spots”

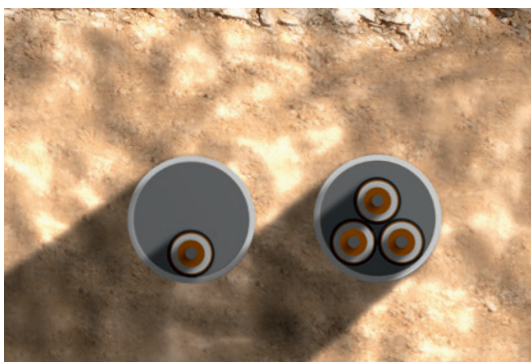


AND CABLECEM

CABLECEM – LOWER THERMAL RESISTANCE WITH CABLECEM

CableCem is a heat-conducting special construction material developed as a backfilling material for jacket tube systems. Thanks to its very good free-flow properties, CableCem is outstandingly well-suited for backfilling the residual annular space between the cable and the jacket tube.

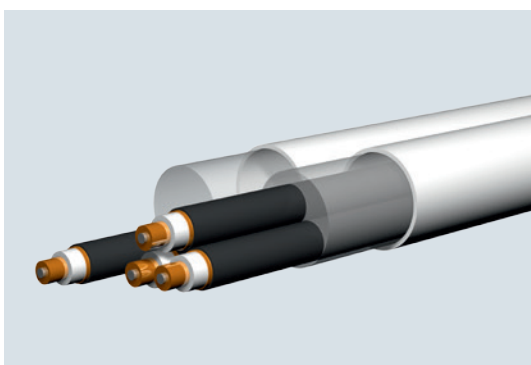
The low thermal resistance of CableCem ensures excellent heat dissipation, and thus reduced capacity loss in the cable line. The power capability of the cable route is thus permanently increased. CableCem is offered in various options with a range of thermal resistances.



↑ CableCem in the cable jacket tube system

PRODUCT ADVANTAGES

- Excellent free-flowing properties
- Improved heat dissipation for HV and UHV cables
- Reduction of magnetic field strength in the cable route area through cable bundling possible
- Increased power capacity possible
- Reduction of conductor cross-section area possible
- Switch to aluminium conductors possible
- Mitigation of "hot-spots"
- Cable removable



↑ A CableCem application



← Removal of the cable with a special drilling head

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We would like to stress that achieving the mentioned properties require a suitable production and processing of the building material as well as a proper, state-of-the art preparation on the construction site.