



Product Data Sheet

Cebo Drill-Grout Plus

Industrial Drilling

Cebo Drill-Grout Plus is a self-setting suspension, used to completely fill annular spaces in HDD and Vertical Drilling operations. Cebo Drill-Grout Plus can also be used for other applications such as filling holes of pulled piles. The product hardens into a plastic material with a low water permeability, preventing underground water layers from mixing. By using Cebo Drill-Grout Plus, subsidence of the ground can be prevented, and steel pipes are protected against corrosion. Cebo Drill-Grout Plus is the most advanced product in our Drill-Grout range, ideally suited to operations requiring a higher end-strength and faster setting time.

Advantages

- Fast setting time
- High end-strength
- Low water permeability
- Easy to mix
- High flowability

Typical Properties

<u>Parameter</u>	<u>Test method / In accordance with</u>	<u>Required</u>
Moisture content	DIN 18121-1	≤ 13%
Grain size	Passing 125 µm dry sieve	≥ 95% < 125 µ
Specific density	-	≈ 2300 kg/m ³
Bulk density	-	≈ 900 kg/m ³

In so far as we can ascertain, the above-stated information is correct. However, we are unable to provide any guarantees with regard to the results that you will achieve with this. This specification is provided on the condition that you determine yourself to what degree it is suitable for your purposes.

Typical Properties - 330 kg Cebo Drill-Grout Plus / 1 m³ water

Parameter	Test method / In accordance with	Typical Property
Marsh Viscosity	-	≈ 45 s/l
Plastic Viscosity	-	≈ 9 cP
Yield Point	-	≈ 23 lb/100 ft ²
Gels	10 seconds	≈ 25 lb/100 ft ²
	10 minutes	≈ 29 lb/100 ft ²
Filtrate Loss	-	≈ 80 ml
Workability	-	< 48 hours
Pressure strength / 7 days (10°C)	CUR 189	≈ 1.100 kN/mm ²
Pressure strength / 28 days (10°C)	CUR 189	≈ 2.000 kN/mm ²
Pressure strength / 56 days (10°C)	CUR 189	≈ 2.800 kN/mm ²

Recommended Use

The properties of Cebo Drill-Grout Plus are optimized when the make-up water has the following properties
- Conductivity: < 1000 µS/cm pH: 7.5 - 10 Total hardness: < 100 ppm

For use in Horizontal applications: add between 320 - 350 kg Cebo Drill-Grout Plus to 1m³ water. Fine adjustments are made to the consistency by varying the solid content; recommended Marsh Funnel Viscosity, minimal 45 seconds. Density should be min. 1.19 kg/m³

For use in Vertical applications: add between 320 - 600 kg Cebo Drill-Grout Plus to 1m³ water. Mixing ratios above 350 kg/m³ should be mixed with low shear mixing system like a flow pump and/or pedal mixer.

Use in HDD: Cebo Drill-Grout Plus is designed to be injected at the same time as the pipe is pulled. In this way, the existing slurry will be displaced. Therefore, it is advised to test the density of the suspension before pulling the pipe. The density of Cebo Drill-Grout Plus should be higher than the slurry in the borehole. This will help to displace the fluid out of the borehole with the Cebo Drill-Grout Plus. Use a barrel reamer (which is smaller than the last reamed diameter) for injecting the Cebo Drill-Grout Plus during pulling of the pipe(s), with 2 nozzles on the machine side and the maximum nozzles at the pipe side open. This set-up will help to remove the old slurry at the front side of the barrel.

Use in Vertical Drilling: Inject Cebo Drill-Grout Plus from the bottom of the borehole through a tremie pipe to remove the existing drilling fluid out of the hole and displace it completely by Cebo Drill-Grout Plus. **Warning!** When installing a water well, it can be necessary to add a clay stop on top of the filter pack. In this way it is not possible for Cebo Drill-Grout Plus to penetrate into the filter pack and/or screened casing. The density of Cebo Drill-Grout Plus should be higher than the slurry in the borehole. This will help you to displace the fluid out of the borehole with the Cebo Drill-Grout Plus. The volume of Cebo Drill-Grout Plus must be 15% more than the calculated volume to be sure that the drilling fluid is fully replaced with Cebo Drill-Grout Plus. Thermal conductivity values for the Cebo Drill-Grout Plus range from 0,6 to 0,7 W/m*K depending on the mixing ratio.

Certification & Accreditation

Cebo Drill-Grout Plus is recognized and registered according to BRL 5078 by Bodem+

Expiry Date

Cebo Drill-Grout Plus is to be used within 6 months after production date. Please speak to your Cebo contact person for information regarding use after expiry date.

Cebo Drill-Grout Plus is available in 25 kg bags and in 1000 kg Big Bags.

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