BEST DRILLING CHEMICALS
SINCE 1976

Modiroll 00 (Sealing Material)

Modiroll 00 is a high-quality clay-based sealing material supplied in the form of pellets (rods) with a diameter of 6 mm or 8 mm and a length of 5–12 mm.
When brought into contact with water, Modiroll 00 pellets swell and increase in volume, forming a homogeneous plastic mass used as a sealing compound.
It is assumed that approximately 1 litre of sealing material is obtained from 1 kg of Modiroll 00.

Application

Modiroll 00 pellets can be used in a wide range of applications, provided that sufficient water is available and there are no obstacles preventing placement in the zone to be sealed.

The pellets are suitable wherever it is necessary to create a plastic seal with a very low hydraulic conductivity (approx. 10^{-8} m/s). The product performs well both in sealing off aquifer layers in boreholes and wells, as well as in general civil, geotechnical, and HDD-related engineering works.

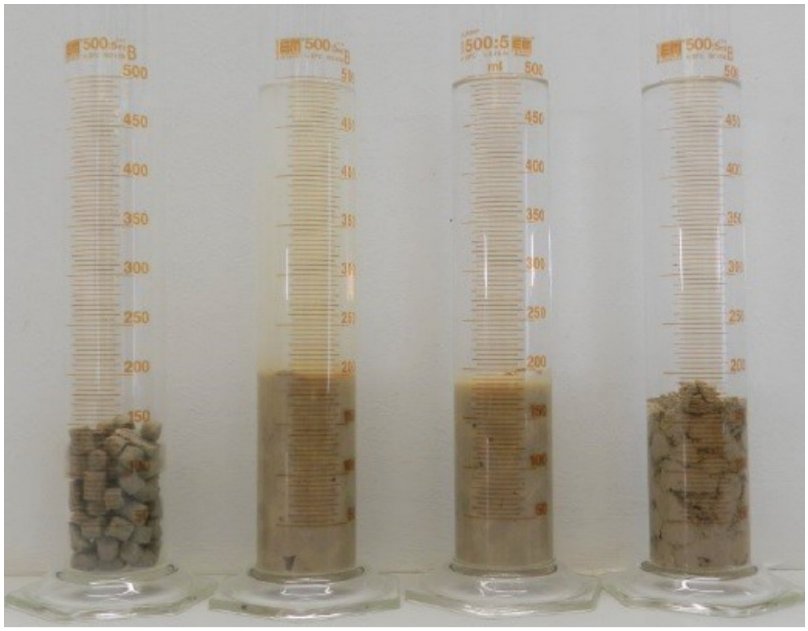
Once maximum swelling is reached, the material remains plastic and adapts (“works”) with the surrounding ground layers. It should be noted, however, that no permanent binding or hardening process occurs.
If the formed seal is exposed to direct atmospheric conditions, it will tend to gradually lose moisture and shrink, while regaining its sealing properties upon renewed contact with water.

Physical Properties

Dimensions	Diameter: Ø 10 mm Length: 6–15 mm
Settling velocity	18 m/min
Bulk density	1.25 g/cm³
Structural stability	Mass loss (sinking test): < 2 % Mass loss (installed condition): 6 % Penetration resistance: n.b. (not tested)

Magnetic and radiological properties	Magnetic susceptibility: not detectable by Magnetic Log* Gamma radiation activity: 50 API*
Swelling properties	Swelling pressure after 35 days: < 0.010 N/mm² Start of swelling: approx. 15 minutes*
Hydraulic properties	Hydraulic conductivity: 5×10^{-11} m/s
Material composition	Moisture content: < 18 % Carbonate content: < 5 %

*value not measured according to DIN method



Swelling Behaviour

If there is concern that Modiroll 00 pellets may start swelling too early within the annular space, the pellets can be mixed with fine gravel, which increases their settling velocity.
During swelling, the sealing material encapsulates the gravel, ensuring that no adverse effects occur that would negatively affect the permeability of the mixture.

Due to the settling velocity and the onset time of swelling, the use of Modiroll 00 pellets is not recommended in boreholes deeper than 300 m.