

Compactonit® 10/80

Bentonite clay pellets with moderate swelling capacity to produce waterproof sealings in groundwater and monitoring wells. Preferable use in dry drilled boreholes with true size calibres.

Product characteristics:

- Due to the limited swelling capacity, good seals are achieved in non-caving annular spaces without any leakages along the surfaces of contact.
- Because of the special swelling behaviour Compactonit 10/80 clay pellets show less tendency of sticking on the surface of temporary installed casing when those are pulled out of refilled borehole sections.
- Reliable water impermeability even for large hydraulic gradients.

Compactonit® TT 20

Clay pellets with low swelling capacity for the backfill of boreholes. Preferable use in large diameter wells (> 400 mm) where high vertical loadforces occur and cause compaction of the installed clay with low coefficient of permeability.

Material characteristics:

	Compactonit 10/80	Compactonit TT20
Appearance	Pellets	Granulate Pellets
External dimensions	Ø 10 mm, L 8-14 mm	3 -8 mm
Sinking speed in water	25 m/min.	20 m/min.
Density	1,8 kg/l	1,7 kg/l
Bulk density	1,0 kg/l	1,0 kg/l
Coefficient of permeability K_f	2×10^{-11} m/s	10^{-9} m/s
Geophysical detection	gamma-gamma log	gamma-gamma log
Gamma Ray activity	approx. 50 API	ca. 50 API

Determination of requirements:

Borehole: [kg/m] Ø hole² (dm) x 7,85
 Annulus: [kg/m] [Ø hole² (dm) - Ø casing² (dm)] x 7,85

Delivery form:

Packaging: 42 x 25 kg plastic bag on pallets
 Big bags available on request

Mikolit 300 / 300 M

Bentonite clay pellets with moderate swelling capacity to produce waterproof sealings in groundwater and monitoring wells. Preferable use in dry drilled boreholes with true size calibres.

Product characteristics:

- Due to the limited swelling capacity, good seals are achieved in non-caving annular spaces without any leakages along the surfaces of contact.
- Because of the special swelling behaviour Mikolit 300 clay pellets show less tendency of sticking on the surface of temporary installed casings when they are pulled out of refilled borehole sections.
- Reliable water impermeability even for large hydraulic gradients.
- Mikolit 300 M can be geophysically detected with magnetic logging.

Mikolit 00

Low swelling clay pellets. Preferable use in large diameter wells where high vertical loads occur and cause compaction of the installed clay with low coefficient of permeability.

Material characteristics:

	Mikolit 300*/300 M*	Mikolit 00
Appearance	Pellets	Pellets
External dimensions	Ø 8 mm, L 5-10 mm	Ø 8 mm, L 5-10 mm
Sinking speed in water	20 m/min.	20 m/min.
Density	1,8 kg/l	1,8 kg/l
Bulk density	1,0 kg/l	1,0 kg/l
Coefficient of permeability K_f *	$< 2,3 \times 10^{-11}$ m/s	$< 2,8 \times 10^{-11}$ m/s
Geophysical detection	*gamma-gamma log ** magnetic log	gamma-gamma log
Gamma Ray activity	approx. 50 API	approx. 50 API

* according to DIN 18130, Part 1

Determination of requirements:

Borehole: [kg/m] Ø hole² (dm) x 7,85
 Annulus: [kg/m] [Ø hole² (dm) - Ø casing² (dm)] x 7,85

Form of delivery:

Packaging: 40 x 25 kg plastic bag on pallets
 Big Bags available on request



GWE ThermoSeal®

Swellable clay pellets with improved thermal conductivity for annular backfill of geothermal probes.

Product characteristics:

- Seals made from water and GWE ThermoSeal have high thermal conductivity. They guarantee excellent thermal transfer in the underground and increase the efficiency of geothermal probes in comparison to standard materials.
- The material demonstrates coefficients of permeability to the order of 10^{-11} m/s. The swelling capacity of the clay pellets ensures a firm, gap-free join to the geothermal system and the surrounding geology. This results in excellent system sealing and a low thermal borehole resistance.
- The clay pellets have smooth, rounded surfaces, thus minimizing the risk of bridge formation when placed.
- Due to the complex annular geometry in holes fitted with duplex probes, we recommend that the clay pellets are inserted using a hose pump via a polythene tremie line.
- In contrast to free flowing clay/cement slurries GWE ThermoSeal® can also be used to fill up and seal fissured or cracked bore hole sections.
- The material is highly resistant to concrete-aggressive waters.

Material characteristics:

Appearance	Pellets
External dimensions	Ø approx. 8 mm, L 2-12 mm
Sinking speed in water	20 m/min.
Bulk density	approx. 1,1 kg/l
Coefficient of permeability K_f	10^{-11} m/s
Max. swelling pressure at constant volume	9 N/cm ²
Thermal conductivity	2,5 W / m K

Determination of requirements:

Borehole: [kg/m] Ø hole² [dm] x 8,64

Form of delivery:

Package: 40 x 25 kg plastic bags on pallets
 Big bags available on request

SBF Quellon® HD

Pellets made of bentonite and magnetite with high swelling capacity and increased density to produce waterproof sealings in deep groundwater and monitoring wells. SBF-Quellon HD annular seals are excellently detectable by geophysical logging.

Product characteristics:

- The high density of the Quellon HD pellets causes an increased V sinking velocity during the installation process. Risks of bridging are minimized accurate placement in boreholes > 100 m is possible.
- Smooth surfaces and the high structural stability of the SBF-Quellon HD pellets delay swelling and prevent dispersion along the trajectory.
- The excellent swelling capacity of SBF Quellon HD ensures a strong attachment of the seal to the borehole wall and the installed casing, without any leakages along the surface of contact.
- Because of the magnetic behaviour of the SBF-Quellon HD, annular seals are excellently detectable by means of magnetic logging.

Material characteristics:

Appearance	Pellets
External dimensions	Ø ca. 10 mm, L 8-14 mm
Sinking speed in water	40 m/min.
Pellet density	2,6 kg/l
Bulk density	1,4 kg/l
Coefficient of permeability K_f	2×10^{-11} m/s
Max. swelling pressure at constant volume	8 N/cm ²
Volume expansion at load of 1 N/cm²	35 %
Impermeability in NaCl salt water	up to 10 g/l – 10^{-10} m/s
Geophysical detection	magnetic log
Gamma Ray activity	approx. 50 API

Determination of requirements:

Borehole: [kg/m] Ø hole² (dm) x 11
 Annulus: [kg/m] [Ø hole² (dm) - Ø casing² (dm)] x 11

Form of delivery:

Packing: 42 x 25 kg plastic bag on pallets
 Big bags available on request

SBF Quellon® WP

Bentonite clay pellets with high swelling capacity and in creased gamma ray activity to produce waterproof sealings in water and monitoring wells which are excellently detectable by geophysical logging.

Product characteristics:

- The excellent swelling capacity of Quellon WP ensures a strong attachment of the seal to the borehole wall and the installed casing, without any leakages along the surfaces of contact.
- Sealants made of SBF-Quellon WP have a high safety margin. Even borehole enlargements, which are difficult to fill up are sealed securely through swelling, with up to 45% expansion.
- Smooth surfaces and the high structural stability of the SBF-Quellon WP pellets delay swelling and prevent dispersion along the trajectory.
- Annular seals made from SBF-Quellon WP are highly detectable by means of gamma logging.

Material characteristics

Appearance	Pellets
External dimensions	Ø approx. 10 mm, L 8-14 mm
Sinking speed in water	25 m/min.
Pellet density	1,8 kg/l
Bulk density	1,0 kg/l
Coefficient of permeability K_f	2×10^{-11} m/s
Max. swelling pressure at constant volume	10 N/cm ²
Volume expansion at load of 1 N/cm²	45 %
Impermeability in NaCl salt water	up to 10 g/l – 10^{-10} m/s
Geophysical detection	gamma log
Gamma Ray activity	> 100 API

Determination of requirements:

Borehole: [kg/m] Ø hole² (dm) x 7,85

Annulus: [kg/m] [Ø hole² (dm) - Ø casing² (dm)] x 7,85

Form of delivery:

Package: 42 x 25 kg plastic bags on pallets
 Big bags available on request

SBF-Troptogel® B

Ready-made mixture of clay and hydraulic binder to produce waterproof sealings in groundwater and monitoring wells.

Product characteristics:

- Very low residual permeabilities and absolute volume resistance.
- No heat generation during setting. Compatible with thermoplastic casings, e.g. SBF-Norip.
- Grouts made of SBF-Troptogel B are stable against sedimentation and have good filtration properties to build up dense filter cake at borewall.
- Low suspension density requires less external pressure load of backfilled casings compared with common cement slurries.
- Geophysically detectable.
- Safe for potable water.

Characteristics of suspension/sealing:

Quantity of SBF-Troptogel® B kg per m ³ water Quality of SBF-Troptogel® B kg in 1 m ³ slurry:		600 490	700 550
Marsh time	seconds	>45	>60
Apparent viscosity	mPa / s	>25	>45
Yield point	lbs/100 sqft	>30	>60
API filtrate	ml	<90	<80
Density	kg/dm ³	1,33	1,35
Processing time	h	5	5
Compressive strength after 7 days	N/mm ²	0,8	0,9
Coefficient of permeability K _f	m/s	5 x 10 ⁻¹¹	5 x 10 ⁻¹¹

Determination of requirements:

Borehole: mass [kg/m]=(borehole diameter²[dm] -casing diameter²[dm])x4,08
 Annulus: M [kg/m]=borehole diameter²[dm])x4,08

Form of delivery:

Packaging: 48 x 25 kg plastic/paper bag on pallets
 Big Bags available on request
 Shelf life: min. 6 months

SBF-Troptogel® C

Ready-made mixture of clay, hydraulic binder and special mineral additives to produce sealants with increased natural gamma ray activity. Preferable use in groundwater and monitoring wells where detectable annular seals are demanded.

Product characteristics:

- Improved geophysical detection.
- Small residual permeabilities and volume resistance.
- Dry material approx. 400 API
- Compatible with thermoplastic casings.
- Low suspension density requires less external pressure load of backfilled casing compared with common cement slurries.

Characteristics of suspension/sealing:

Quantity of SBF-Troptogel® C kg per m ³ water Quality of SBF-Troptogel® C kg in 1 m ³ slurry:		750 600
Marsh time	seconds	50-55
Yield point	lbs/100 sqft	47
API filtrate	ml	90
Density	kg/dm ³	1,39
Processing time	h	5
Compressive strength after 28 days	N/mm ²	2,6
Coefficient of permeability K _f	m/s	3,0 E ⁻¹¹
Gamma Ray activity	API	> 100

Determination of requirements:

Annulus: $M \text{ [kg/m]} = (\text{borehole diameter}^2 \text{ [dm]} - \text{casing diameter}^2 \text{ [dm]}) \times 4,5$

Form of delivery:

Packaging: 48 x 25 kg plastic/paper bag on pallets
 Big Bags available on request

Compactonit® 10/200

Bentonite clay pellets with high swelling capacity to produce waterproof sealings in ground water and monitoring wells. Preferable use in boreholes drilled with rotary mud techniques.

Product characteristics:

- The excellent swelling capacity of Compactonit 10/200 ensures a strong attachment of the seal to the borehole wall and the installed casing, without any leakages along the surfaces of contact.
- Seals made from Compactonit 200 have a high safety margin. Even hard-to-fill borehole enlargements are sealed securely through swelling, with up to 45% expansion.
- Smooth surfaces and the high structural stability of the Compactonit pellets delay swelling and prevent dispersion along the trajectory.
- Annular seals made from Compactonit 200 can be detected by means of gamma-gamma density logging.

Material characteristics:

Appearance	Pellets
External dimensions	Ø approx. 10 mm, L 8-14 mm
Sinking speed in water	25 m/min.
Pellet density	1,8 kg/l
Bulk density	1,0 kg/l
Coefficient of permeability K_f	2×10^{-11} m/s
Max. swelling pressure at constant volume	10 N/cm ²
Volume expansion at load of 1 N/cm²	45 %
Impermeability in NaCl salt water	up to 10 g/l – 10^{-10} m/s
Geophysical detection	gamma-gamma log
Gamma Ray activity	approx. 50 API

Determination of requirements:

Borehole: [kg/m] Ø hole² (dm) x 7,85
 Annulus: [kg/m] [Ø hole² (dm) - Ø casing² (dm)] x 7,85

Form of delivery:

Packing: 42 x 25 kg plastic bag on pallets
 Big bags available on request