

General product information

Requirements and characteristics

In the field of natural clay barriers in well constructions and groundwater measuring sites sealing clays and compounds are used as ring seals between the well-pipe and the borehole.

The main requirements for all products used for these sealing purposes are impermeability, chemical resistance, and hygienic safety with regard to groundwater pollution. The impermeability of the built-in clays, however, is of overriding importance, particularly in order to prevent the water from percolating down the sides of the well-pipe or the borehole.

Due to cracks and fissures in the borehole caused by geological setting or by the drilling device and because of the smooth surfaces of the pipes it is difficult to achieve a hydraulically effective bonding of the clays.

In ring seals, products with high swelling capacity, e.g. Hydropipe extra 10-200, show very small remaining permeabilities of 2×10^{-11} m/s. They are virtually impermeable, so that no water is found percolating down the edges of the contact surfaces. The swelling produced by the smectite minerals causes a permanent tension which guarantees an impermeable binding to the well-pipe and the borehole.

The round shape of the clay pellets and their smooth, relatively small surfaces permit high sinking velocities in water and drilling muds. During the sinking process the material virtually does not swell. The compactness of the pellets brings about several other advantages: it prevents premature disintegration of the pellets as well as unwanted dispersion when the water comes in. Furthermore, the risk of mud sticking at spigot-and-socket joints is reduced to a minimum. All Hydropipe products do not contain organic additives to slow down the dispersion. The existence of properly positioned clay barriers of sealing clays can be proved for all products by geophysical methods.

Hydropipe extra 10-200, medium 10-80 and Standard can be geophysically identified by means of Gamma rays. They are indicated in accordance with the specific weight of clay which is smaller than that of gravels and sands. Special pellets with higher magnetic-log provability or radiation activity > 100 API are available on request.

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Product range

Universal products with high swelling capacity for wet drillings

Hydropipe extra 10-200, Hydropipe extra 10-200 γ -active, Hydropipe medium 10-80 magnetic active

Clay pellets with high swelling capacity, suitable for ring seals in wet and dry drillings at medium depth (± 75 m). Due to their high swelling capacity they ensure maximum binding to the sides of the pipe and the borehole and guarantee the density of the hydraulic barrier even under difficult circumstances. Detectable by means of gamma-gamma-log.

Sealing clays true to size for dry drillings

Hydropipe medium 10-80

Clay pellets with moderate swelling capacity for ring seals, to be used preferably in dry drillings and for small depths. Due to the slow and relatively moderate swelling process mud does not stick on the pipes and the casing pipes can be removed without any problems. In drillings true to size it prevents water from running down the sides of the well-pipe or the borehole. This product is suitable for seals with limited security reserve, yet it is without any doubt geologically impermeable.

Hydropipe medium 10-80 represents an economic alternative for sealing clays with high swelling capacity. It is detectable by means of gamma-gamma-log.

Clays for simple tasks

Hydropipe Standard

Extruded clay for ring seals of minor depth as well as for simple sealing of shafts and similar constructions. Detectable by means of gamma-gamma-log

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