



The **Geo-Textile “AquaHold”** plays an important role at the preparation of the ground for the implementation of AquaSoil.

To prevent the rapid percolation of water through sandy soils asphalt layers are recommended as water barrier. Also layers of about 5cm clay can be used for this purpose.

The easier method is the use of asphalt, but such a layer is totally gas and watertight, what could cause over a period of some years different side effects. Due to the tight barrier a marshy ground could be observed. Also a surplus of standing water over the barrier layer could lead to an anaerobic process of decay, what could have a negative impact on the roots.

Mostly the asphalt's also containing other mineral oils of various fractions what could pollute the soil.

A layer of clay is for sure the better solution, especially because such a barrier is more or less semitransparent for water and air, depending on the thickness of the layer. Most of the effects are nevertheless similar to the asphalt layers.

Another disadvantage is the heavy weight of the clay, which has to be bought in countries with moderate climate with a high burden of transport expenditures. Furthermore the high capillarity of clay will support the ascent of salt water from deeper sections of the soil.

More ideal is the **Geo-Textile “AquaHold”**, micro-coated with the **everlasting** fluoropolymer Solaflon®, with a very low surface tension of about 20mN/m and no side effects. Such a layer of **AquaHold** remains pervious to air, but holds the water. But in case the water pressure is too high due to an overload of water, **AquaHold** becomes also pervious to water, because it is water repellent, but not watertight.

A spacer layer between two **AquaHold** textiles will stop the capillary activity in both directions. In this respect the combination of **AquaSoil** with **AquaHold** is the only solution to prevent the sucking of salt water from deeper sections.

AquaHold triple layer with zero capillarity

To avoid any water exchange between two layers of the soil it is necessary to cut down all capillary bridges between those sections.

A single layer of a geo-textile will not fulfil this task, because there exists a capillary connection through this textile, whereas the multi-filament fibres of this fabric acting as capillary bridges.

Only a spacer-material with no capillary function stops this.

In this respect the three layer construction as illustrated with the pictures on the left side guarantees the zero capillarity within these layers.

The water drops on the surface showing the respective repellence.

That is caused by the **Solaflon** micro coating of the **AquaHold** felt.

Such a micro coating prevents also that the fabric becomes or stays wet, what would influence the air permeability of the material negatively.



lower layer of AquaHold

spacer

upper layer of AquaHold with water drops on the micro coated surface



alternative spacer for a high load

A further very important point has to be observed. If a normal felt is used instead of **AquaHold**, there is a permanent flow of water through the untreated fabric. This water carries very small soil particles, which are filling up the space of the middle layer within shortest time. If the filling is done, the full capillary throughput is given again.



To avoid that salty seawater is contaminating the upper layers of a soil near the sea, AquaHold as triple layer is the only solution to this problem!