VOLGRIP LH - Light





BENTONITE HYDRO-REACTIVE MEMBRANES

PRODUCT DESCRIPTION

VOLGRIP LH is a self-gripping bentonite membrane for the effective protection against groundwater of structures built with reinforced concrete that is constant, fluctuating or due for demolition.
Its particular self-gripping structure prevents interface transmigration of water phenomena.

PRODUCT APPLICATION

• Applications with reinforced concrete castings (beds and foundation walls against diaphragms, sheet pile and Berlinese retaining walls, existing foundations or disposable formwork) in constructions such as garages, cellars, warehouses, safety vaults, taverns, stores, multi-storey car parks, underpasses, tunnels etc...
Contact Volteco Technical Service for a different use.

ADVANTAGES

• Natural-based product, it earns points for LEED certification
• Insuperable self-confinement
• High impermeability
• It can be drilled, cut and shaped to adapt to the structure
• Natural Sodium Bentonite-based product
• Easy and quick application

PREPARATION AND APPLICATION

How it works

When in contact with water, or just simply in contact with the ground humidity, the natural Sodium Bentonite contained in VOLGRIP LH turns into a waterproof gel through hydration and expands up to 16 times its initial dry volume while remaining waterproof tank to the self-confinement implemented by outdoor non-woven textile.

The special VOLGRIP needle-punching allows perfect self-confinement in such expansion once the casting is carried out (which is very important to obtain high waterproofing).

In fact, the fibres of the non-woven textile (on the external side) protrude purposely from the textile (on the internal side) and during the casting, the fibres are embedded into the concrete, thereby resulting in excellent mechanical adhesion of all the product layers to the structure therefore not a simple surface adhesion (see drawing FIG. 1).

Through the calibrated mesh of the porous textile, the bentonite gel partially extrudes, thereby guaranteeing the seal of the overlaps and preventing water seepage between VOLGRIP and the concrete.

This phenomenon also allows the cracks that are normally caused by concrete shrinkage to be self-repaired.

Surfaces that are to be waterproofed can be damp, not necessarily clean but must not have great protrusions, cavities or continuous water flows that could compromise the self-sealing process of the overlaps.

The sheets can be folded and cut in any direction.

Laying the product under slabs

Level the surface with lean concrete.

Apply VOLGRIP LH with the darker textile surface facing upwards, with staggered joints and overlapping the edges by 10 cm.

Apply the sheets with FIX 1 or with nails and FIX 5 every 70 cm (approximately).

Laying the product on vertical surfaces

For existing walls (post-casting) waterproofing: use PLASTIVO 250 (see relative data sheet).

For walls that are to be built against diaphragms, Berlinese and sheet pile retaining walls or existing structures: apply VOLGRIP LH after having levelled large cavities and/or rough parts, especially where the sheets overlap, with the darker textile surface facing the structure, taking care to stagger the joints and overlap the edges by 10 cm.

Apply the sheets with FIX 1 or with FIX 5 and gun-driven nails with washers every 30 cm (approximately).

Then lay the reinforcements, formwork and related concrete casting.

To seal all accessories with AKTI-SEAL 201, WT, AKTI-VO BS (see the relative technical data sheets) according to the type and size of the through body.

For walls to be built with formwork, including disposable: attach VOLGRIP LH to the formwork, leaving the darker side of the textile facing towards the inside of the building.

Then lay the reinforcements, internal formwork and the relative casting.

PLEASE NOTE: The overlaps between the sheets must be at least 25 cm from each construction joint.

Avoid cross overlaps.

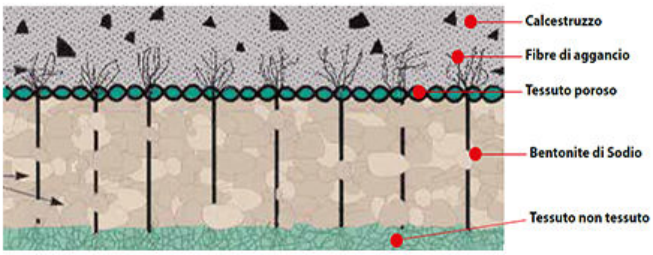


FIG. 1







References available at www.volteco.com

WARNINGS - IMPORTANT NOTES

Compact and smooth concrete castings are required beneath VOLGRIP LH, both in horizontal and vertical applications, which form the structure and are suitably sized for the working and hydraulic loads.

PLEASE NOTE: For installations in the presence of water with high salt concentration and polluted soils, ask Volteco Laboratory for preventive tests.

All horizontal and vertical construction joints must be sealed with WT gasket.

Any structural joints must be sealed with the appropriate WT profile.

PACKAGING AND STORAGE

The product is packed in rolls as follows:

- 1.10x5 m, reaching a total length of 5.50 m^2 and a weight of about 27.5 kg (packaging excluded)
- 2.50x30 m, reaching a total length of 75 m^2 and a weight of about 375 kg (packaging excluded)

The products must be stored in a dry place protected from sun and humidity.

PHYSICAL AND TECHNICAL SPECIFICATIONS

Parameters subject to company Quality Control	Standards	Values
Thickness	UNI EN ISO 9863-1	> 4 mm
Sodium Bentonite content	UNI EN 14196	> 4 kg/m^2
Free swelling	ASTM D 5890	> 24 ml/2g
Fluid Loss Index	ASTM D 5891	< 18 ml
Montmorillonite content	XRD	80%
Tensile strength	UNI EN ISO 10319	8.5 kN/m
Resistance to static punching (CBR)	UNI EN ISO 12236	1.8 kN
Hydraulic capacity of the geocomposite	ASTM D 5887	6E^{-9} m^3/m^2/s
Resistance to peeling off from concrete	ASTM D 903	> 1.5 kN/m

WATCH VIDEOS AND INSIGHTS

Safety Data Sheets | Declaration of performance | Specifications | Technical drawings and BIM | EPD Declaration | YouTube Video

SAFETY

Refer to the related Safety Data Sheet.

CE

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EN 13491:2004
1488-CPR-0638/Z
VOLGRIP LH
Geosynthetic bentonite with barrier function (GBR-C), to be used as a barrier against fluids in the construction of tunnels and underground structures

Tensile strength (MD): 8.5 kN/m

Tensile strength (CMD): 8.5 kN/m

Resistance to static punching (CBR): 1,8 kN

Hydraulic capacity: 6x10^{-9}m^3/m^2/s

Durability (Annex B): To be checked within one day of installation.

Minimum duration of 25 years on natural soils with pH between 4 and 9 and temperature of less than 25°C.

See SDS

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