BENTONITE HYDRO-REACTIVE MEMBRANES

VOLGRIP EP

PRODUCT DESCRIPTION

VOLGRIP EP is a bentonite geomembrane, composed of sodium bentonite encapsulated between two geotextiles, for the effective waterproofing of water containment or waste storage and disposal structures, whether built with natural soil or concrete.

PRODUCT APPLICATION

In combination with a protective confinement layer of concrete or compacted soil for the construction of:
- Reservoirs and dams
- Canals and river banks
- Landfills for disposal or secondary containment of liquid waste
- Solid waste landfills
- Infrastructure works such as roads, railways, airport runways...

ADVANTAGES

- Natural-based product, it earns points for LEED certification
- Insuperable self-confinement
- High impermeability
- Robust construction, can also be drilled, cut and shaped for any adaptation
- Application on tilted surfaces
- 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 EP turns into a waterproof gel through hydration and expands up to 16 times its initial dry volume while remaining waterproof tank to the self-containment implemented by outdoor non-woven textile.
In the case of concrete structures, the special VOLGRIP EP needle-punching allows perfect self-containment 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 (not simple superficial adhesion).
Otherwise, in the case of compacted soil for protection, the soil itself will perform the confinement function.
The laying surfaces may be damp/wet and must not have any large protuberances or cavities or continuous water flows that could jeopardise the independent sealing of the overlaps.
The sheets can be folded and cut in any direction.

Preparation of the laying surface

Smooth out large voids and/or unevenness and level the surface with lean concrete, alternatively compact the laying surface with suitable means according to modified Proctor 85 test.

VOLGRIP EP

Application

Apply VOLGRIP EP with the textile surface facing upwards, with staggered joints and overlapping the edges by 20 cm.
GRANULAR SODIUM BENTONITE must be homogeneously deposited along the overlaps.
On sloping floors, the sheets must be fixed to the bottom:
- in the case of a lean concrete base with nails and FIX 5
- in the case of compacted soil with the aid of steel rod connectors

Coverage

Cover VOLGRIP EP with concrete or a well-compacted soil layer of at least 40 cm.
The protective ground cover must consist of well-graded soil, sand or crushed gravel (avoid sharp stones or stones with a diameter of more than 2.5 cm).
The protective covering must be distributed using low-load machinery, keeping the covering material constantly between the covering and the wheels.
It is important that machinery or other heavy vehicles do not pass over VOLGRIP EP until it has been covered with at least 30 cm of protective material.

WARNINGS - IMPORTANT NOTES

Adequately reinforce the areas of mat immersion around any through pipes or other foreign bodies with the use of GRANULAR SODIUM BENTONITE.

PACKAGING AND STORAGE

The product is packed in rolls as follows:
• 2.50x30 m, reaching a total length of 75 m^2 and a weight of about 750 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
Non-woven weight	UNI EN ISO 9864	200 g/m^2
Weight	UNI EN ISO 9864	100 g/m^2
Sodium Bentonite content	UNI EN 14196	4200 g/m^2
Free swelling	ASTM D 5890	24 ml/2g
Fluid Loss Index	ASTM D 5891	18 ml
Tensile strength	UNI EN ISO 10319	8 kN/m
Resistance to static punching (CBR)	UNI EN 12236	1.5 kN
Hydraulic capacity of the geocomposite	UNI EN 16146	$6E^{-9}$ $m^3/m^2/s$

SAFETY

Refer to the related Safety Data Sheet.

CE

VOLTECO S.p.a
Via delle Industrie, 47 - 31050 Ponzano Veneto (I)

23
DOP 0042
EN 13361:2004, EN 13361:2004/A1:2006, EN 13362:2005, EN 13492:2004, EN 13492:2004/A1:2006, EN 13493:2005, EN 15382:2013
1488-CPR-0638/Z
VOLGRIP EP
Geosynthetic bentonite with barrier function (GBR-C) to be used as a barrier to fluids in the construction of basins and dams, canals, landfills and works for the transfer or secondary containment of liquid waste, solid waste landfills and support infrastructures.

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

COPYRIGHT

LEGAL NOTES

Note for buyer/installer:
This document prepared by Volteco S.p.A. is provided as an aid and guideline for the buyer/installer.
This does not take into consideration the details of each single operational context, for which Volteco S.p.A. will not be held liable.
This does not change and does not extend the obligations of Volteco S.p.A.
It may vary and the installer is therefore required to update his/her information prior to each application by referring to www.volteco.com.
The before-after sales technical/trade information of the sales network have the same validity as this document.