



Dehumidification systems, water repellent treatments, thermo-acoustic insulation , waterproofing



Certified Quality System since **FEBRUARY 1993**

From Project to Jobsite

TECNOCLAY PANEL N. 1

BENTONITE WATERPROOFING

- Description** TECNOCLAY PANEL N. 1 is a waterproofing panel made of bio-degradable cartonboard containing about 5,5 kg/m² natural sodium bentonite.
- Advantages**
- Characteristics**
- TECNOCLAY PANEL N.1 can be applied at any temperature.
 - TECNOCLAY PANEL N.1 can be perforated, or cut, and modelled to any complex structure.
 - TECNOCLAY PANEL N.1 is easy to apply and fixed with proper nails.
 - The natural sodium bentonite contained in TECNOCLAY PANEL N.1 guarantees the performance in time according the specifications of the application.
 - Fundamental: after the positioning of the panels and the confinement by concrete, the bentonite will be transformed into gel in presence of water or humidity and gradually the cartonboard will decompose. The natural activation of the waterproofing system will also close normal shrinkage cracks in the substrate by the expanding gel.
 - The adhesion of the gel to the concrete avoids the penetration of the water. In case of local application defects, these can be repaired by localised injections.
- Indicated use** TECNOCLAY PANEL N.1 is specifically indicated to waterproof underground concrete structures, particularly when subjected to continues vibrations and movements related to the type of structure or due to external circumstances (traffic, changing water levels etc.)
- Method of use**
- **Under concrete slab:** apply first a layer of stabilising concrete on the well-compacted soil. Position the TECNOCLAY PANELS N.1 overlapping at least 5 cm and staggering them. Nail each corner. Protect the waterproofing layer with a concrete layer of the same quality of the final lap.
Install the final slab in reasonable short time.
 - **Vertical substrates:** seal and repair after demoulding, all the distance holders, gravel pits with the two-components repair mortar BS 38 Bicomponente (see also the relative product datasheet).
- Reinforce with a part of the panel, or with BENTOBAR all the connection between horizontal slab and vertical wall, over the full jointing area.
- Position the TECNOCLAY PANELS N.1, overlapping for at least 5 cm, and fix by nails at each corner. Position the cartons starting from below to the top of the construction, with careful superposition of the panels to overlap. It is possible to fill already with ground while proceeding with application of the panels.
- Apply first a protective T.N.T. sheet in strips of 50 cm before filling with dense soil dense and with well graded particle size. Compact the soil gradually.
- The ultimate 10 cm, reaching ground level, the TECNOCLAY PANELS N.1 shall be confined with anchored systems, free from the soil (plates fixed to the concrete).
- Walls against water partitions:** clean and smoothen first the substrate mechanically or by cement based mortars. Seal water infiltrations first with TECNOSTOP (see product datasheet). Reinforce the connection between horizontal slab and vertical wall with BENTOBAR or BENTOTEC PRG.
- Position the TECNOCLAY PANELS N.1 overlapping with 5 cm minimum, and nail all the corners, and on other points when necessary to improve adhesion. The positioning of the panels shall be done from bottom to top, overlapping all the joints.
- Install the reinforced concrete wall in reasonably short time.



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Remark The waterproofing properties are created by the transformation of the natural sodium bentonite inside the carton panels into a bentonite gel. The sodium bentonite can swell 30 times the original volume. In gel condition, when the bentonite will be waterproofing, the maximum swelling can be 16 % of the original volume. It is therefore to create a confinement which does not allow more expansion.

For installations in contaminated or coastal areas, or where there are or can be high concentrations of electrolytes or other substances in the groundwater, special attention must be given to avoid any influence on the expansion properties of the bentonite. In these cases, consult the technical department of TECNOCHEM ITALIANA to confirm the suitability of the system.

- **The structures in concrete must be suited to resist the maximum water pressure. The water pressure on the structure is exercised where the waterproofing layer is present.**

Packaging Pallets of 100 carton panels, in total surface of 144 m²

Technical characteristics (typical values) Natural sodium bentonite

- Apparent weight: 1,1÷1,35 Kg/l
- Specific weight: 2,65÷2,75 Kg/l
- Specific surface: > 2.500.000 cm² per cm³ dry bentonite
- Expansion to gel with distilled water: ≥ 16 times the original volume
- Size of one panel: 1,44 m²
- Bentonite expansion ASTM D 5890: > 26 ml

Tecnoclay panel n. 1

- Dimensions: 120x120 cm
- Thickness: ≥ 5 mm
- Weight panel: ≥ 8 Kg
- Permeability coefficient (Darcy): K = 1E-11 m/sec
- pH (in water suspension 2%): 9÷10
- Bentonite per m²: ≥ 5 Kg
- Bentonite in each panel: ≥ 7,2 Kg
- Limit liquid containment: > 500%
- Humidity of the bentonite: ≤ 12%

Safety indications Read carefully the safety indications on the packaging, or consult the relevant Material Safety Datasheet of this product.

The above information is based on our best experiences and lab results. This datasheets replaces and supersedes the previous versions. We cannot held responsible for negative results that are due to improper use of the product, or due to causes unconnected to the quality of the product.

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TECNOCLAY PANEL N. 1
pag. 2/2