



Bentorub®

Product Description

Bentorub® is a green flexible hydrophilic strip of approximately ¾" x 1" (20mm by 25 mm), made of natural sodium bentonite clay and synthetic rubber. Bentorub is manufactured in lengths of 16.4 feet. The swelling properties are created by the particle structure of the clay. In contact with water and in confined conditions, Bentorub will swell to approximately 4V and create a waterproofing pressure inside the joint. The expanding clay mass will seal hair line cracks and voids in the joint. The first expansion is delayed to prevent the strip from reacting too soon with possible rainwater, before or during the installation.



Product Advantages

- Swells up to 4V
- Simple and quick to install
- Composition prevents premature swelling
- Resists hydrostatic pressure up to 267 feet of head
- Excellent durability and longevity

Applications

- Bentorub is designed for sealing cold joints, construction joints, and working joints in concrete; around pipe penetrations, in sewer joints, against slurry walls, sheet piling,
- Can be used in combination with INJECTO® Tube in high risk situations.

Properties

Swelling capacity	4V	Independent Lab Test
Density	1.44 g/cm ³	ASTM D71
Weight	0.48 lb/ft.	DNCC
Cone penetration	35.5	ASTM D217
Confined Expansion Pressure	101 psi	Independent Lab Test
Hydrostatic Pressure Resistance	116 psi	DNCC
Elongation at Rupture	7500%	Independent Lab Test
Maximum Bend	180° above 32°F	Independent Lab Test
Installation T	5°F-140°F	DNCC
Operating T	-49°F-248°F	DNCC

Note: The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

Packaging & Handling

Case: 6 rolls x 16' 8" each (50 lbs)

Bentorub should be stored under cover, clear of the ground. Protect the materials from all sources of moisture and frost. Store between 40°F and 85°F. Shelf life is unlimited in correct storage conditions.

Installation Guidelines

1. General.

- Bentorub can only function properly in a confined space in order to develop sufficient expansion pressure and assure waterproofing.
- The expansion of Bentorub will create a certain pressure, which needs to be counteracted by at least 2 ¾" of concrete coverage at both sides (installation in the middle of the joint is preferred).
- Bentorub is preferably applied onto a smooth and dust-free concrete surface. Bentorub can be used under most weather conditions.
- Installation during heavy rain or in prolonged contact with water can result in a premature swelling of the strip, which should be avoided.
- No special precautions should be taken during the preparatory activities (installation of the reinforcement bars, placement of shuttering, etc) in view of the subsequent installation of bentonite strip.
- Bentorub is applied during the installation of the 2nd phase reinforcement bars, in between inner and outer rows of reinforcing bars.

2. Substrate preparation.

- Remove dust, dirt and loose parts by brushing firmly.
- In case of very rough surface, it is recommended to level with SWELLSEAL® WA prior to installation of Bentorub. When using Swellseal WA, Bentorub needs to be fixed with nails.
- Alternatively, use MS Fixer to level and glue Bentorub in place. This method is only valid for horizontal applications.
- In case of vertical or overhead applications, Bentorub cannot be glued with MS Fixer, only use Bentosteel and nails.

3. Horizontal applications.

Application by nailing with or without Bentosteel.

- Unroll Bentorub in the middle of the joint and press down firmly
- Nail directly to the substrate using 1 nail with washer per ft.

Application by gluing with MS Fixer

- Apply a bead of MS Fixer of ¼"x½" with a caulking gun on the concrete surface.
- Unroll the Bentorub strip and press firmly into the glue. Wait until the glue is dry before pouring concrete (a concrete cover of 2 ¾" on all sides should always be maintained). The roll ends should have a lateral overlapping of 2 to 4 inches. The ends need to be pressed firmly together.
- Additional nailing or gun nailing will provide secure fixing onto the concrete.

4. Vertical and overhead applications by nailing with Bentosteel.

- Unroll the Bentorub strip (a concrete cover of 2 ¾" at all sides should always be respected). The roll ends should have a lateral overlapping of 2 to 4 inches. The ends need to be pressed firmly together.
- Install the Bentosteel wire mesh profile over the Bentorub.
- Fix the system by nailing or gun nailing (use nails with washer, approximately 1 per foot).

5. Remarks.

- Bentorub can be fixed around pipe penetrations with steel wire (dry surface) or MS Fixer (dry to moist surface).
- For special applications, such as contact with strongly polluted water or chemicals, it is recommended to consult the DeNeef representative. For contact with salt or brackish water, use Bentorub Salt.

Limitations

Must have at least 2 ¾ inches of concrete cover on all sides and be totally confined in the structure.

Health and Safety

Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest. Refer to Material Safety Data Sheet for detailed safety precautions.

In the event of an EMERGENCY call:

CHEMTREC 800-424-9300.



Bentorub installed between inner and outer rebar, with Bentosteel wire mesh

Consumption

The necessary quantities depend on the length of the various (construction) joints, which need to be sealed. It has to be taken into consideration that a lateral overlapping of 2 to 4 inches between 2 lengths of Bentorub is necessary. MS Fixer consumption can vary greatly depending on the roughness of the concrete.

MS Fixer design consumption

Smooth concrete: 2 oz./yard of joint.

Rough concrete: 4 oz./yard of joint.

Accessories

To be ordered separately:

Bentosteel

Steel wire mesh profile for Bentorub.

1" wide x 3/8" high

Mesh grid: 0.4 in. x 0.4 in.

Length: 3.28 ft.

Packaging: 30 x 3.28 ft.

Swellseal WA

Mastic for leveling the surface.

Gray color.

10.5 oz. cartridges

12 cartridges per cardboard box.

75 boxes per pallet.

(See respective Technical Data Sheet)

MS Fixer

Caulk applied adhesive for Bentorub.

13.5 oz. sausages.

20 sausages per cardboard box.

48 boxes per pallet.

www.deneef.com

Technical Service 1-800-732-0166

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