

Structural Waterproofing Systems

ATAL BENTOFIX 5300 DATASHEET

Description

ATAL BENTOFIX 5300 is designed for installations of vertical or horizontal structures below ground level where there is a need to prevent the ingress of both water and ground gas. ATAL BENTOFIX 5300 is a needle-punched GBR-C comprised of a uniform layer of powder sodium bentonite that is encapsulated between a slit-film woven and a staple-fibre nonwoven geotextile. The woven fabric is coated with a low-permeability polymer polyolefin coating to achieve an immediate gas and radon gas barrier prior to hydration. Where gas permeation or desiccation may become an issue the polymer coating on ATAL BENTOFIX 5300 adds a level of protection to the bentonite to help to improve its performance. The coated, woven geotextile side is in general not placed against the concrete structure. Bentofix Tape should be used in all laps.

Uses include:

- Waterproofing protection to grades 1, 2 and 3 of BS8102:2009
- Protection from ground gases including methane, CO₂ and radon.
- Provides protection in either post-applied or pre-applied situations.
- Either horizontal or vertical application.

Advantages

- Unique impermeable lap joints derived from surface bentonite impregnation of the non-woven geotextile layer during manufacture
- Full surface contact between the Bentonite impregnated cover layer and the concrete ensures that small cracks and surface imperfections are sealed
- Self-healing bentonite properties
- Quick and easy installation in almost all weather conditions
- Forms a tenacious mechanical bond to poured concrete when cast in situ, remaining in place if settlement of the substrate occurs
- No requirement for priming systems or protection systems

- BBA Accredited, certificate no. 05/4256



Typical Properties @ 20°C

- | | |
|------------------------|------------------|
| • Tensile Strength | 20 kN/m /11 kN/m |
| • Puncture Force | 2500N |
| • Peel Strength | >360N/m |
| • Water Permeability | <5 x10m/s-9 |
| • Methane Permeability | 5.46 x10m/s-9 |
| • Radon Permeability | 1.3x10-11 m2/s |
| • Thickness | 6.0mm |

Specification Outline

Waterproofing shall be carried out using ATAL BENTOFIX 5300 sodium bentonite membrane as supplied by atal uk. The product must be stored, handled and used strictly in accordance with the datasheets.

Standards

ATAL BENTOFIX 5300 has been tested in accordance with the appropriate parts of the following standards:

ASTM D5887, CSN 73 0601, ISO 10913.

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Installation Instructions

Horizontal Floor Slab Application

For installation of horizontal concrete slabs following the required groundwork preparation, a 50mm blinding layer of lean concrete or sand/gravel is placed, compacted and levelled. This layer should be free from debris and have a smooth surface. All standing water shall be removed before the Bentofix membrane is unrolled on site. Alternatively well compacted hardcore or clay base may be suitable, please contact [atal uk](http://atal.uk) for more information.

To obtain a watertight seal the membrane edges must be overlapped a minimum of 300mm in the centre and 300mm at edges. Avoid wrinkles, folds and uneven overlaps. Where BBA compliance is necessary for ground gas protection all laps are to be taped with Bentofix Tape.

The concrete must be poured following the direction of overlaps to minimise the chances of a break in the waterproofing. In all applications it is essential that the vibrating poker used to compact any immediate concrete does not come into contact with the Bentofix membrane.

Vertical Casting Application

In most cases the ATAL BENTOFIX 5300 membrane shall be secured in vertical wall applications to the concrete with the bentonite impregnated nonwoven geotextile side facing towards the concrete. Should the ATAL BENTOFIX 5300 membrane be used as a gas barrier and installed against a piled wall or sacrificial shutter then the membrane will need to be reversed with the bentonite impregnated nonwoven side facing the shutter or piled wall.

Floor to wall joints must be overlapped a minimum of 400mm. Avoid wrinkles, folds and uneven overlaps. The Bentofix Tape must be used in all laps, 75mm over each roll, on the laminated side. Ensure all overlaps are aligned not to let concrete through when poured and level is rising.

Pre Applied Application

Apply the ATAL BENTOFIX 5300 to timber formwork, 'tacking' by nail or staple either horizontally or vertically, following general application guidelines for lapping all adjacent edges 300mm, and staggering adjacent roll ends no less than 300mm, ensuring that laps face downwards. The woven geotextile side should be against the formwork, and the nonwoven/spun geotextile side should face the concrete to be waterproofed. Extend Bentofix the full depth of the formwork, so that the Bentofix laps 300mm over the Bentofix already cast into the slab edge and wall kicker, and allow no less than 300mm at the top of the formwork, to provide ground slab continuity later, if required. Position formwork and penetrate the Bentofix with tiebolts, as necessary. Usual concrete practice is applied in terms of striking times for formwork, but due care should be taken to ensure that the Bentofix remains bonded to green concrete.

Where a slab 'toe' exists, and underslab Bentofix has terminated at the top edge of slab, additional Bentofix may be required to ensure continuity and to link underslab/edge of slab Bentofix with the vertical Bentofix. Apply a 50x50mm fillet of Bentonite Paste (powder & water) at the internal wall/slab corner, and place additional Bentofix over the slab 'toe' lapping 300mm over the edge of slab Bentofix, and continue over the 'toe' terminating under the unbonded wall Bentofix 'flap' at the back of the kicker. Ensure all laps are taped with Bentofix Tape.

Post Applied Application

When post applied to the concrete the ATAL BENTOFIX 5300 membrane shall be secured to the concrete using proprietary soft washer pins (30mm length min.) at 300mm centres along the 20mm outside edges, and at 300mm centres within the area of the membrane if required to hold it in place.

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Precautions

Health and Safety:

ATAL BENTOFIX 5300 rolls are heavy and may need mechanical lifting to be moved. Bentofix 5300 is available in 3 roll sizes:

1.20 x 4.5m = 28kg
2.42 x 15m Roll = 210kg
4.85 x 40m Roll = 1000kg

Full health and safety data are given in the Product Safety Data Sheet.

Fire

ATAL BENTOFIX 5300 is non-flammable.

Storage And Shelf Life

ATAL BENTOFIX 5300 will have a shelf life of 12 months when kept in dry conditions at a temperature of 5°C to 45°C. Storage at higher temperatures and high humidity may reduce the shelf life.

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