

# SikaProof Bentonite

## Natural sodium bentonite below ground waterproofing system

### Positioning Description

**SikaProof Bentonite** is a needle-punched **thermally locked** Geosynthetic Clay Liner (GCL) used to waterproof below ground concrete structures.

**SikaProof Bentonite** is a waterproofing system which efficiently protects reinforced concrete structures, preventing the penetration of water and subsequent attack by aggressive chemical substances present in the surrounding soil.

**SikaProof Bentonite** is manufactured in Australia in accordance with the ISO 9001:2000 Quality Management System and consists of high quality polypropylene geotextiles and premium grade natural sodium bentonite.

**SikaProof Bentonite** is fibre-reinforced by needle-punching the product across its entire length and width. The high strength fibres are then thermally locked to ensure the high self-confining properties of **SikaProof Bentonite**.

### Use

**SikaProof Bentonite** is ideally suited to:

- Conventional construction waterproofing applications
- Applications where concrete is poured or sprayed directly against the waterproofing system
- Where other traditional types of barriers are susceptible to mechanical damage
- Cast in-situ floors and walls
- Precast panel walls
- Foundation pile sealing
- Shotcrete walls

### Advantages

- Rugged and durable needle-punched geotextile.
- Can be installed in almost any weather.
- High shear resistance, less prone to damage on site.
- Self healing membrane if ripped or punctured.
- Waterproof.
- Excellent chemical resistance.
- Will swell into and seal cracks that form in concrete.
- Can be applied directly to piled basement walls and existing property lines.

### Product Data

**Form:** Needle-punched Geosynthetic Clay Liner

**Colour:** Yellow / Grey

### Storage & shelf life:

- Rolls of **SikaProof Bentonite** should always be stored lying flat, continuously supported clear of direct ground contact and should never be stored standing on one end.
- Store, handle and freight **SikaProof Bentonite** rolls and accessories in dry and stable conditions to protect the product from premature hydration, deterioration or damage. Enclosed indoor storage such as a shipping container or a warehouse environment is preferred if **SikaProof Bentonite** is to be stored for long periods.
- Keep rolls of **SikaProof Bentonite** in original plastic wrappers for ease of product identification & greater weather protection.
- For safety, move and lift 1.1m x 10m rolls using two (2) persons per roll with lifting bar through the core of the roll and move and lift 2.2m x 10m rolls using approved mechanical lifting devices.



<b>Packaging:</b>	SikaProof Bentonite	1.1m wide x 10m roll
	SikaProof Bentonite	2.2m wide x 10m roll
	SikaProof Bentonite Paste	20 litre pails
	SikaProof Bentonite Powder	25kg bags

## Technical Data

<b>Bentonite Mass</b>	ASTM D5993	≥ 4000 @ 0%	g/m <sup>2</sup>
<b>Swell Index</b>	ASTM D5890	≥24	ml/2g
<b>Fluid Loss</b>	ASTM D5891	≤15	ml
<b>Peel Adhesion to Concrete</b>	ASTM D903 (mod.)	28.1 (4.9)	lbs/inch (kN/m)
<b>Hydrostatic Pressure Resistance</b>	ASTM D5385 (mod.)	126.7	m
<b>Permeability</b>	ASTM D5887	2 x 10 <sup>-09</sup>	cm/s
<b>Grab Tensile Strength</b>	ASTM D4632	550	N
<b>Puncture Resistance</b>	ASTM D4833	630	N
<b>Low Temperature Flexibility</b>	ASTM D1970	Unaffected @ -32	°C
<b>Roll Dimensions</b>	In-house	2.2 x 10 1.1 x 10	m
<b>Roll Weight</b>	61kgs (1.1m x 10m roll), 122kgs (2.2m x 10m roll)		
<b>Dry Thickness</b>		6	mm

## Application Conditions

### Instructions for use Surface Preparation

- Base course substrates should be smooth, firm and unyielding (typically compacted to >90% Standard Proctor density).
- **SikaProof Bentonite** can be applied to damp concrete, however, concrete must be at least 48 hours old and must be free from standing water.
- Masonry surfaces and concrete surfaces shall be smooth and even, with no abrupt deviations.
- All damage, holes and cracks in masonry substrates must be repaired with the appropriate Sika MonoTop repair system.
- Masonry surfaces and concrete surfaces with blow holes and minor imperfections shall be 'bagged' with Sika MonoTop Fairing Coat or other appropriate cement-based mortar or with **SikaProof Bentonite paste**.
- Mortar joints in masonry blockwork must be finished flush with the surface. If mortar joints have been pointed apply Sika MonoTop Fairing Coat levelling mortar or other appropriate cement-based mortar to joints to make flush with surface.
- Tie-bolt holes must be filled with Sika Grout 212, proprietary non-shrink grout.
- Keep the site water table level at least 300mm below the level of the base or site concrete during the tanking process.
- Complete any substrate remedial work prior to any **SikaProof Bentonite** application or placement.
- Substrate preparation shall be approved by the designer / engineer prior to installation of the waterproofing barrier.

## Application Method

### Under Concrete Slabs

- Prior to the installation of **SikaProof Bentonite** under concrete slabs, an optional blinding layer of lean mix site concrete can be placed. This layer should have a typical thickness of 50mm and provide a level working platform for the placement of the **SikaProof Bentonite**. The completed layer should have a smooth surface and be free from debris.
- **SikaProof Bentonite** is installed by simply rolling out the product, yellow side uppermost. Ensure the overlap area is clean and free from any debris and distortion. Water-tight overlaps are achieved by overlapping **SikaProof Bentonite** by 150mm, with **SikaProof Bentonite Paste** applied entirely in the overlap region and protruding approximately 50mm past the overlap. Ends of rolls should be staggered and a 300mm overlap is required.
- Before the concrete slab is poured, ensure the **SikaProof Bentonite** is extended a minimum of 300mm beyond the edge of concrete work and protect to allow correct overlapping to any further connection or vertical wall placement.
- The overlaps should all run in a uniform direction. The fresh concrete should be placed in the direction of overlapping to avoid pushing wet concrete under the overlaps.



<b>Vertical Concrete Walls.</b>	<ul style="list-style-type: none"> <li>• <b>SikaProof Bentonite</b> is typically installed with the non-woven (yellow) side facing upwards for cast in-situ concrete applications. This will enable the <b>SikaProof Bentonite</b> to form a tenacious bond with the concrete slab.</li> <li>• The installation of <b>SikaProof Bentonite</b> to vertical concrete walls requires pre-cutting of lengths to suit the wall height. Side overlaps in the <b>SikaProof Bentonite</b> shall be a minimum 150mm wide. The top of each length of SikaProof Bentonite shall be fixed to the concrete (if post fixed) or formwork (if pre fixed) at max. 300 centres along the top edge and within the end overlap area.</li> <li>• End of roll overlaps should be a minimum of 300mm and staggered a minimum of 300mm away from each other. Ensure that <b>SikaProof Bentonite</b> overlaps do not coincide with construction joints. The overlaps must be flat and wrinkle free to ensure a good intimate contact with the concrete and the backfill.</li> <li>• The overlap between the floor slab waterproofing and the wall waterproofing should be a minimum of 300mm and fully pasted in the lap with SikaProof Bentonite Paste. An additional <b>SikaProof Bentonite</b> barrier strip, 400mm wide can be used. This should be placed directly over the construction joint, running parallel to it so that the overlap areas of the liners at the connection are fully sealed.</li> <li>• The method of placement and orientation of <b>SikaProof Bentonite</b> will depend on whether the wall is cast in-situ or precast. <ul style="list-style-type: none"> <li>• For cast in-situ concrete walls, <b>SikaProof Bentonite</b> should be orientated so that the non-woven (yellow) surface is facing the pour ie. woven (white) side is fixed to the formwork.</li> <li>• For precast concrete walls, <b>SikaProof Bentonite</b> should be attached to the wall face by nailing with Hilti XSW 30mm soft washer fixings, ensuring that the woven (white) side is in contact with the concrete.</li> </ul> </li> </ul>
<b>Important Notes</b>	<ul style="list-style-type: none"> <li>• Always store <b>SikaProof Bentonite</b> and accessory products in a dry area, laid flat and protected with polyethylene sheet. Store products so that they are not in contact with the ground.</li> <li>• Ensure all movement and construction joints are detailed with the appropriate <b>Sika PVC Waterbar</b> or <b>SikaSwell</b> waterstop.</li> <li>• To prevent the possible intrusion of soil or other materials between the panel edges of <b>SikaProof Bentonite</b> at ground level and the structure, a termination bar should be installed. It should be attached to the structure, by fixing at 300mm centres, slightly below the tanking line (100 to 150mm) around the whole structure. A non-degradable bar or batten is recommended for this purpose.</li> <li>• Where contaminated ground water or salt water conditions exist, consult Sika (NZ) Ltd.</li> </ul>
<b>Notes</b>	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
<b>Local Restrictions</b>	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.
<b>Health &amp; Safety Instructions</b>	
<b>Protective Measures</b>	<ul style="list-style-type: none"> <li>• To avoid rare allergic reactions, we recommend the use of protective gloves. Change soiled work clothes and wash hands before breaks and after finishing work.</li> <li>• Local regulations as well as health and safety advice on packaging labels must be observed.</li> <li>• For further information refer to the Sika Material Safety Data Sheet which is available on request.</li> <li>• If in doubt always follow the directions given on the pack or label.</li> </ul>
<b>Important Notes</b>	<ul style="list-style-type: none"> <li>• Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities.</li> <li>• Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the safety data sheet.</li> </ul>



# Construction

## Legal Notes

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.



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