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## PRODUCT DATA SHEET

# PUDLO Membrane BW

### DESCRIPTION

**PUDLO Membrane BW** is a waterproofing of high strength geotextiles and 4.8 kg/sqm of sodium bentonite. **PUDLO Membrane BW** is needle-punched during the manufacturing process which interlocks the two geotextile layers together. The bentonite encased within the layers maintains equal coverage and is protected from construction related damage.

### USES

For all aspects of waterproofing where a Grade 2 or Grade 3 environment is required as part of a single or dual system recommended in BS8102:2009. **PUDLO Membrane BW** provides protection in either post or pre-applied situations. The membrane can be used in horizontal or vertical applications. **PUDLO Membrane BW** is suitable for basement construction including lift pits, slabs, liner walls, capping beams and service penetrations. **PUDLO Membrane BW** is also designed to be used in earth covered roofs, structural slabs, tunnels and property line construction.

### BENEFITS

- **PUDLO Membrane BW** is a needle-punched high strength geotextile system.
- Full surface contact between the impregnated cover layer and the PUDLO concrete ensures that small cracks and surface imperfections are sealed.
- Forms a mechanical bond to poured concrete when cast in situ, remaining in place if settlement of the substrate occurs.
- Self-healing.
- Quick and easy installation.
- Can be installed in all weather conditions.
- Can be used in sprayed concrete applications, secant / contiguous and sheet piled design.
- BBA accredited.



### TECHNICAL DATA

#### Bentonite

Material Properties	Test Method	Nominal Value
Bentonite Free Swell	ASTM D 5890	>24ml / 2g
Bentonite Fluid Loss	ASTM D 5891	18ml max
Bentonite Mass / Unit Area	EN 14196	4.8kg/m <sup>2</sup>



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### Membrane Composite

Material Properties	Test Method	Nominal Value
Hydrostatic Pressure Resistance	ASTM D 5385 (mod)	70m
Peel Adhesion to Concrete	ASTM D 903 (mod)	2.6Kn / m min
Water Permeability / Hydraulic Conductivity	ASTM D 5084	$1.0 \times 10^{-9}$ cm/s
Tensile Strength (MD / CD)	EN ISO 10319	8.0 Kn/m / 8.0 Kn/m
Thickness @ 2 kPa	EN ISO 9863-1	7.0 mm (typical)
Puncture Resistance	EN ISO 12236	1.5Kn
Low Temperature Flexibility	ASTM D 1970	Unaffected @ -32°C

### SURFACE PREPARATION

Installation guidelines provided in this data sheet are for cast-in concrete applications. Pre-cast, shotcrete and other applications are not covered. Please refer to the **PUDLO** technical team for installation guidelines. **PUDLO Membrane BW** should be installed in accordance with installation instructions. **PUDLO Membrane BW** is installed with the woven geotextile toward the concrete. **Surestop BWB / HDBR Waterbar** must be installed in all construction joints where **PUDLO Membrane BW** is used.

#### Horizontal Floor Application:

Installation of **PUDLO Membrane BW** concrete slabs requires the following ground preparation:

- 50mm blinding layer of lean concrete or sand/gravel is placed, compacted and levelled. This blinding layer should be free from dirt and debris and have a smooth surface.
- Standing water should be removed before **PUDLO Membrane BW** is unrolled on site. Alternatively, **PUDLO Membrane BW** can be laid on well-compacted hardcore, or a clay base may be suitable.
- **PUDLO Membrane BW** should be laid so the woven geotextile side is facing towards the concrete.
- To obtain a watertight seal, the edges must be overlapped a minimum of 100mm in the centre and 300mm-350mm where membrane overlaps to bridge the construction joint. All sheet ends should be staggered a minimum of 300mm. Always avoid wrinkles, folds and uneven overlaps.
- **PUDLO CWP** modified concrete or standard concrete must be poured following the direction of each overlap of the **PUDLO Membrane BW** to minimise the chances of a break in the waterproofing membrane. All concrete must be fully compacted as per best concrete practice. Information on concrete practice can be obtained from **PUDLO** or The Concrete Society.

#### Vertical Wall Application:

- **PUDLO Membrane BW** must be secured and fixed to the concrete with the non-woven geotextile side facing away from the concrete.
- Floor to wall joints must be overlapped a minimum of 300-350mm whilst avoiding wrinkles, folds and uneven overlaps.
- Ensure all overlaps are aligned to not allow any concrete through when poured and level of concrete is rising.
- When fixing **PUDLO Membrane BW** against secant, contiguous or sheet piling, this is held in place with soft washer fixings nailed into the membrane at 600mm centres.
- When fixing **PUDLO Membrane BW** to timber formwork the non-woven (white) side should be installed against the formwork.
- When fixing **PUDLO Membrane BW** to timber formwork, please ensure the laps face downwards and stagger adjacent roll-ends no less than 300mm.
- Where a slab 'toe' exists and **PUDLO Membrane BW** has terminated at the top of the slab, additional **PUDLO Membrane BW** will be required to ensure continuity and to link the under-slab and edge of slab together. Apply a 38mm x 38mm fillet of **PUDLO Membrane Seal** or **PUDLO Membrane Granules** at the internal wall/slab corner.



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- Once timber formwork is positioned as required and **PS Tie Bolt Hole Tubes** are installed (penetrating the **PUDLO Membrane BW**) normal formwork striking times apply in line with code of practice. **PUDLO Membrane BW** must remain bonded to the concrete.

### Post-applied Installation:

**Preferred method of installation is to pre-apply the membrane. For post-apply fixings please contact PUDLO for full instructions and to discuss project specific requirements.**

### Penetrations:

- Please refer to **PUDLO Membrane Seal** and **PUDLO Membrane Granules** for information.

### Ground Termination:

- **PUDLO Membrane BW** is terminated 300mm below GF level and fastened with soft washer fixings.
- Overlap secondary waterproofing measure in line with manufacturer's specification (typically 150mm overlap) and up into the cavity tray. For specific details please contact **PUDLO**.

### LIMITATIONS

- **PUDLO Membrane BW** is not intended for movement joints or masonry block foundation walls.
- For reinforced concrete thicknesses please contact **PUDLO** with your technical requirements.

### ANCILLARY PRODUCTS

- **PUDLO Membrane Granules**
- **PUDLO Membrane Seal**
- **Surestop BWB / Surestop SWB (sealing construction joints)**
- **Surestop Adhesive**
- **Surestop SM**
- **Surestop Voidformer**
- **Surestop Steel Cage Mesh**
- **PS Tie Bolt Hole Tube**
- **Soft Washer Fixings**

### PACKAGING

1.1m x 5m rolls. Weight 33kg.

### HEALTH & SAFETY

**PUDLO Membrane BW** rolls are heavy and may need mechanical lifting.

### STORAGE

**PUDLO Membrane BW** should be kept in dry conditions.

### FIRE

**PUDLO Membrane BW** has been independently tested and is classified as Class E in accordance with EN 13501-1. Please refer to **PUDLO Membrane BW** MSDS for information.

For further information on accessories that are used with **PUDLO Membrane BW** please contact **PUDLO** Head Office on 01954 780687 or email [sales@pudlo.com](mailto:sales@pudlo.com)