

# Fibre-reinforced Geosynthetic Clay Liner (GBR-C)

## Bentofix® NSP 4300

**Bentofix® NSP 4300** is a shear strength transmitting geosynthetic clay barrier (GBR-C), continuously needle-punched through all components. A GBR-C is also known as geosynthetic clay liner (GCL) or bentonite mat. Additional bentonite powder is impregnated into a 500 mm overlapping area on both longitudinal sides of the cover layer. The 300 mm length longitudinal overlapping areas are marked on the carrier layer.

Property	Test method*	Unit	Value
<b><u>Geotextile layers:</u></b>			
<b>Cover layer</b> (polypropylene nonwoven):			
Mass per unit area	EN ISO 9864	g/m <sup>2</sup>	≥ 200
<b>Carrier layer</b> (polypropylene woven):			
Mass per unit area	EN ISO 9864	g/m <sup>2</sup>	≥ 100
<b><u>Bentonite layer</u></b> (sodium bentonite powder):			
Mass per unit area	EN 14196 ( $\rho_{\text{CLAY}}$ )	g/m <sup>2</sup>	4,000
Swell index	ASTM D5890	ml/2g	≥ 24
Fluid Loss	ASTM D5891	ml	≤ 18
Water content	ISO 11465 (5hrs, 105 °C)	%	approx. 10
<b><u>Geosynthetic Clay Liner:</u></b>			
Mass per unit area	EN 14196 ( $\rho_{\text{GBR-C}}$ )	g/m <sup>2</sup>	4,330
Thickness	EN ISO 9863-1	mm	6.0
Tensile strength, md/cmd**	EN ISO 10319 / ASTM D6768	kN/m	13.0 / 13.0
Elongation at max. strength, md/cmd**	EN ISO 10319 / ASTM D6768	%	10.0 / 6.0
Peel strength	ASTM D6496	N/10 cm*** N/m	≥ 60 ≥ 360
Static puncture	EN ISO 12236 / ASTM D6241	N	2,200
Hydraulic Conductivity ( $k_{10}$ )	EN 16416 / ASTM D5887	m/s	$1.2 \times 10^{-11}$
Permittivity ( $\Psi_{10}$ )	EN 16416 / ASTM D5887	1/s	$2.5 \times 10^{-9}$
Index Flux ( $q_{10}$ )	EN 16416 / ASTM D5887	(m <sup>3</sup> /m <sup>2</sup> )/s	$3.5 \times 10^{-9}$
<b><u>Roll dimensions:</u></b>			
width x length, / diameter (approx.)	-	m x m / m	5.00 x 50 / 0.60

\* = based on; \*\*md = machine direction, cmd = cross machine direction; \*\*\*max. peak

The listed technical values are guiding values, achieved in our laboratories and/or independent testing institutes. Our products are subject to changes without prior notice.