

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



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## Bentofix® NSP 4000

### Australia / New Zealand

**Bentofix® NSP 4000** 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. 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	Values
<b>Geotextile layers:</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>Bentonite layer</b> (sodium bentonite powder):			
Mass per unit area	EN 14196 ( $\rho_{\text{CLAY}}$ , 0%)	g/m <sup>2</sup>	≥ 2,900
Swell index	ASTM D5890	ml/2g	≥ 24
Fluid Loss	ASTM D5891	ml	≤ 18
Montmorillonite content	VDP69 (Methylene blue)	mg/g	≥ 300
<b>Geosynthetic Clay Liner:</b>			
Mass per unit area	EN 14196 ( $\rho_{\text{GBR-C}}$ , 0%)	g/m <sup>2</sup>	≥ 3,200
Thickness	EN ISO 9863-1	mm	≥ 5.4
Max. tensile strength, md/cmd**	EN ISO 10319 / ASTM D6768	kN/m	≥ 10.8 / ≥ 10.8
Elongation at break, md/cmd**	EN ISO 10319 / ASTM D6768	%	≥ 8 / ≥ 5
Peel strength	ASTM D6496	N/m	≥ 360
Static puncture strength	EN ISO 12236 / ASTM D6241	N	≥ 1,800
Permeability / Hydraulic Conductivity ( $k_{10}$ )	EN 16416 / ASTM D5887	m/s	≤ 3.5 x 10 <sup>-11</sup>
Index Flux ( $q_{10}$ )	EN 16416 / ASTM D5887	(m <sup>3</sup> /m <sup>2</sup> )/s	≤ 1 x 10 <sup>-8</sup>
<b>Roll width</b>	-	m	5.0

\* = based on; \*\*md = machine direction, cmd = cross machine direction, ≥ = MARV, ≤ = MaxARV

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