

BENTOMAT® DNW3700-GL Self

GEOSYNTHETIC CLAY LINER (GCL)

CETCO® BENTOMAT® DNW3700-GL Self is a reinforced GCL for the Australian market consisting of a layer of sodium bentonite between a scrim-reinforced nonwoven and a nonwoven geotextile, which are needle-punched together to provide internal reinforcement. Scrim-reinforced double nonwoven GCLs provide better dimensional stability, reduced panel shrinking, and higher strength as compared to ordinary double nonwoven GCLs while maintaining the advantage of higher interface friction performance.¹

TECHNICAL DATA			
MATERIAL PROPERTY	TEST METHOD	CERTIFIED VALUE	TEST FREQUENCY
GCL			
Index Flux	ASTM D5887	$\leq 1.0 \times 10^{-8} \text{ (m}^3/\text{m}^2\text{)/s}$	25000 m ²
Hydraulic Conductivity ²	ASTM D5887	$\leq 5.0 \times 10^{-11} \text{ m/s}$	25000 m ²
Total Mass/Unit Area ³	ASTM D5993	$\geq 4100 \text{ g/m}^2$	4000 m ²
Bentonite Mass/Unit Area ³	ASTM D5993	$\geq 3700 \text{ g/m}^2$	4000 m ²
Moisture Content	ASTM D5993	35% max.	4000 m ²
Tensile Strength MD	ASTM D6768	$\geq 4.0 \text{ kN/m}$	20000 m ²
Peel Strength	ASTM D6496	$> 400 \text{ N/m}$	4000 m ²
GCL Flux at 35kPa ⁷	ASTM D6766	$\leq 1.0 \times 10^{-7} \text{ (m}^3/\text{m}^2\text{)/s}$	Yearly ⁹
Typical Roll Length x Width ⁴	—	40,0 m x 5,0 m	Continuous
BENTONITE			
Swell Index ⁵	ASTM D5890	$\geq 24 \text{ ml/2 g}$	50 tonnes
Fluid Loss ⁵	ASTM D5891	$\leq 18 \text{ ml}$	50 tonnes
Montmorillonite Content ⁵	XRD	$> 70\%$	1/batch
Carbonate Content (Calcite) ⁵	XRD	$< 1 - 2\%$	1/batch
Cation Exchange Capacity ⁵	TP-1016	$\geq 70 \text{ meq/100g}$	50 tonnes
GEOTEXTILES			
Non-Woven Cap Mass/Unit Area ⁶	ASTM D5261	$\geq 200 \text{ g/m}^2$	20000 m ²
Non-Woven Composite Carrier Mass/Unit Area ⁶	ASTM D5261	$\geq 200 \text{ g/m}^2$	20000 m ²
Geotextile Durability ^{6,8,9}	GRI-GCL3 §5.6.2	65% retained min.	Yearly

Bentonite powder is impregnated into overlap area 50cm from both sides.

Notes:

¹ Installation in accordance with CETCO® recommendations and ASTM Standard Guide D6102.

² Index flux and hydraulic conductivity testing with deaired distilled/deionized water at 550 kPa pressure, 530 kPa headwater pressure and 515 kPa tailwater pressure.

³ Reported at 0% moisture content.

⁴ Project specific roll dimensions should be confirmed with a Technical Sales Manager.

⁵ Bentonite property tests performed before the bentonite is incorporated into the finished GCL product.

⁶ Geotextile property tests performed on the geotextile components before they are incorporated into the finished GCL product.

⁷ Testing performed yearly for GCL manufactured with woven and nonwoven geotextiles and bentonite mass per unit area min. 3700 g/m² at 0% moisture content. The GCL test specimen is hydrated with distilled, deionized water prior to testing with a 0,05M CaCl₂ solution at 35 kPa normal pressure via ASTM D6766 in accordance with paragraph 5.6.1 of GRI-GCL3, rev. 5, dated November 21, 2019.

⁸ Base and cap geotextile test specimens are oven-aged for 50 days at 60 °C prior to testing for tensile strength in accordance with paragraph 5.6.2 of GRI-GCL3, rev. 5, dated November 21, 2019.

⁹ Yearly testing results can be provided upon request.