

BENTOMAT® DNW4000A-2 Self

GEOSYNTHETIC CLAY LINER (GCL)

CETCO® BENTOMAT® DNW4000A-2 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 ²	ASTM D5887	9.0×10^{-9} (m ³ /m ²)/s max.	25000 m ²
Permeability ²	ASTM D5887	5.0×10^{-11} m/s max.	25000 m ²
Total Mass/Unit Area ³	ASTM D5993	4400 g/m ² min.	4000 m ²
Bentonite Mass/Unit Area ³	ASTM D5993	4000 g/m ² min.	4000 m ²
Moisture Content	ASTM D5993	35% max.	4000 m ²
Tensile Strength MD/CMD	ASTM D6768	14,0/14,0 kN/m min.	20000 m ²
Peel Strength	ASTM D6496	600 N/m min.	4000 m ²
Thickness	EN ISO 9863-1	5 mm min.	20000 m ²
Typical Roll Length x Width ⁴	—	40,0 m x 5,0 m	Continuous
BENTONITE			
Swell Index ⁵	ASTM D5890	24 ml/2 g min.	50 tonnes
Fluid Loss ⁵	ASTM D5891	18 ml max.	50 tonnes
Bentonite Durability ^{7,9}	GRI-GCL3 §5.6.1	1×10^{-7} (m ³ /m ²)/s max. @ 35 kPa	Yearly
GEOTEXTILES			
Non-Woven Cap Mass/Unit Area ⁶	ASTM D5261	200 g/m ² min.	20000 m ²
Scrim Non-Woven Base Mass/Unit Area ⁶	ASTM D5261	200 g/m ² min.	20000 m ²
Base and Cap 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 cell 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.