

Bentotex® is a high specification geosynthetic clay liner, comprising of high quality natural sodium bentonite encapsulated between a woven and a non-woven needlepunched polypropylene geotextiles. Bentotex® CL also has a geomembrane laminated to one side. Bentotex® adopts unique self-seaming overlaps technology which doesn't require any additional treatment of its longitudinal edges.

| Property                                      | Test Method           | Bentotex® 30                                         | Bentotex® 30-SL       | Bentotex® 45                                         | Bentotex® 45-SL       | Bentotex® 50                                         | Bentotex® 50-SL       |
|-----------------------------------------------|-----------------------|------------------------------------------------------|-----------------------|------------------------------------------------------|-----------------------|------------------------------------------------------|-----------------------|
| <b>Physical Properties</b>                    |                       |                                                      |                       |                                                      |                       |                                                      |                       |
| Total mass per unit area <sup>1</sup>         | EN 14196              | 3500 g/m <sup>2</sup>                                | 3700 g/m <sup>2</sup> | 4850 g/m <sup>2</sup>                                | 5050 g/m <sup>2</sup> | 5500 g/m <sup>2</sup>                                | 5700 g/m <sup>2</sup> |
| Bentonite mass per unit area <sup>1</sup>     | EN 14196              | 3200 g/m <sup>2</sup>                                | 3200 g/m <sup>2</sup> | 4550 g/m <sup>2</sup>                                | 4550 g/m <sup>2</sup> | 5200 g/m <sup>2</sup>                                | 5200 g/m <sup>2</sup> |
| Bentonite mass per unit area <sup>3</sup>     | EN 14196              | 2860 g/m <sup>2</sup>                                | 2860 g/m <sup>2</sup> | 4000 g/m <sup>2</sup>                                | 4000 g/m <sup>2</sup> | 4640 g/m <sup>2</sup>                                | 4640 g/m <sup>2</sup> |
| Thickness <sup>5,7</sup>                      | EN 9863-1             | 5.5mm                                                | 5.7 mm                | 7.0 mm                                               | 7.0 mm                | 7.5 mm                                               | 7.5mm                 |
| <b>Hydraulic Properties</b>                   |                       |                                                      |                       |                                                      |                       |                                                      |                       |
| Flux index <sup>2</sup>                       | EN 16416              | 6x10 <sup>-9</sup> m <sup>3</sup> /m <sup>2</sup> /s | No flow               | 4*10 <sup>-9</sup> m <sup>3</sup> /m <sup>2</sup> /s | No flow               | 3*10 <sup>-9</sup> m <sup>3</sup> /m <sup>2</sup> /s | No flow               |
| Permeability <sup>9</sup>                     | DIN 18130 / ASTM 5887 | 3* 10 <sup>-11</sup>                                 | No flow               | 1*10 <sup>-11</sup>                                  | No flow               | 1*10 <sup>-11</sup>                                  | No flow               |
| Water Absorption                              | -                     | 600%                                                 | 600%                  | 600%                                                 | 600%                  | 600%                                                 | 600%                  |
| Montmorillonite content <sup>8</sup>          | XRD                   | 80%                                                  | 80%                   | 80%                                                  | 80%                   | 80%                                                  | 80%                   |
| <b>Mechanical Properties</b>                  |                       |                                                      |                       |                                                      |                       |                                                      |                       |
| Peel Strength                                 | ASTM D6496            | 1000 N/m                                             | 1000 N/m              | 1000 N/m                                             | 1000 N/m              | 1000 N/m                                             | 1000 N/m              |
| Tensile Strength <sup>4</sup>                 | EN ISO 10 319         | 11 kN/m                                              | 11 kN/m               | 11 kN/m                                              | 12.5 kN/m             | 11 kN/m                                              | 12.5 kN/m             |
| Static puncture resistance (CBR) <sup>5</sup> | EN ISO 12236          | 2.0 kN                                               | 2.2 kN                | 2.0 kN                                               | 2.2 kN                | 2.0 kN                                               | 2.2 kN                |
| <b>Textiles (PP)</b>                          |                       |                                                      |                       |                                                      |                       |                                                      |                       |
| Non-Woven Mass/Unit Area <sup>8</sup>         | EN ISO 9864           | 200 g/m <sup>2</sup>                                 | 200 g/m <sup>2</sup>  | 200 g/m <sup>2</sup>                                 | 200 g/m <sup>2</sup>  | 200 g/m <sup>2</sup>                                 | 200 g/m <sup>2</sup>  |
| Woven Mass/Unit Area <sup>8</sup>             | EN ISO 9864           | 100 g/m <sup>2</sup>                                 | 100 g/m <sup>2</sup>  | 100 g/m <sup>2</sup>                                 | 100 g/m <sup>2</sup>  | 100 g/m <sup>2</sup>                                 | 100 g/m <sup>2</sup>  |
| Membrane <sup>8</sup>                         | EN ISO 9864           | -                                                    | 200 g/m <sup>2</sup>  | -                                                    | 200 g/m <sup>2</sup>  | -                                                    | 200 g/m <sup>2</sup>  |

1 average, at 12% moisture content, tolerance 4%

2 average, tolerance 0.5x10<sup>-9</sup> m<sup>3</sup>/m<sup>2</sup>/s

3 bentonite mass at 0% moisture content

4 average, tolerance 2.0 kN

5 Puncture resistance (CBR) with tolerance – 0.2 kN

6 material is fully saturated and it is this measured at 2kPa pressure

7 average, tolerance 10 %

8 certified by supplier

9 average tolerance 0.5\*10<sup>-11</sup> m/s

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