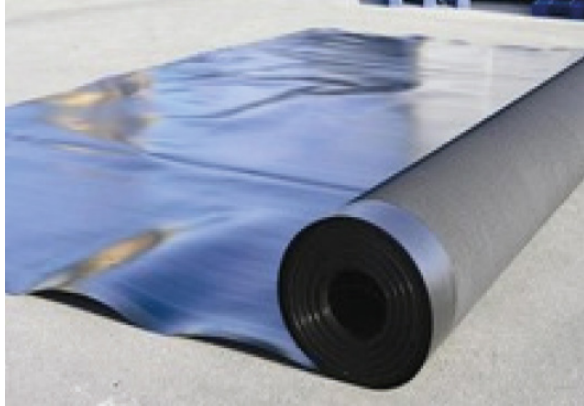


# Specialist Geomembranes

## Technical Data sheet

### Landflex PE-HD Smooth Finish



A high quality, single layer HDPE suitable for use as a barrier membrane on brownfield sites, petrol stations, coalfields, landfill & contaminated industrial areas. The material is highly suited to attenuation ponds, lagoons, water features & as a high performance damp proof membrane because of its high puncture resistance. The membrane offers protection from Carbon Dioxide, Methane and Radon as well as certain common hydrocarbons.

All Landflex PE-HD geomembranes are certified according to the relevant European Standards:  
EN13361, EN13362, EN13491, EN13492, EN13493, EN15382 & EN13967

The information herein is based upon data obtained by the manufacturer and is considered accurate.

However, no warranty is expressed or implied regarding the accuracy of this data. This information is furnished upon the condition that the person receiving it shall evaluate its suitability for the specific application.



| Tested Property                                       | Unit              | Test Method                                   | Frequency  | Values (*)          |                     |                     |                     |                     |                    |
|---|-------------------|---|------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|
| Thickness (a)   | mm                | ASTM D 5199                                   | Every Roll | 0.75                | 1.00                | 1.50                | 2.00                | 2.50                | 3.00               |
| Density   | g/cm <sup>3</sup> | ASTM D 792                                    | 90,000kg   | ≤0.94               | ≤0.94               | ≤0.94               | ≤0.94               | ≤0.94               | ≤0.94              |
| Tensile Properties (each direction) (Minimum Average) |                   | ASTM D 6693 Type IV                           |            |                     |                     |                     |                     |                     |                    |
| Strength at break                                     | N/mm              | Dumbell, 2 imp                                | 9,000kg    | 19                  | 26                  | 38                  | 50                  | 64                  | -                  |
| Strength at yield                                     | N/mm              |   |            | 10                  | 14                  | 21                  | 28                  | 35                  |                    |
| Elongation at break                                   | %                 | G.L 2.0 in (50mm)                             |            | 700                 | 700                 | 700                 | 700                 | 700                 |                    |
| Elongation at yield                                   | %                 | G.L 1.3 in (33mm)                             |            | 12                  | 12                  | 12                  | 12                  | 12                  |                    |
| Tensile Properties (each direction) (Minimum Average) |                   | ASTM D 638/6693 Type IV:                      |            |                     |                     |                     |                     |                     |                    |
| Strength at break                                     | N/mm              | 50mm/min                                      |            | -                   | -                   | -                   | -                   | -                   | 100                |
| Strength at yield                                     | N/mm              | lo = 33mm                                     |            |                     |                     |                     |                     |                     | 48                 |
| Elongation at break                                   | %                 | 50mm/min                                      |            |                     |                     |                     |                     |                     | 800                |
| Elongation at yield                                   | %                 | lo = 50mm                                     |            |                     |                     |                     |                     |                     | 16                 |
| Tear Resistance (min. avge)                           | N                 | ASTM D 1004                                   | 20,000kg   | 88                  | 119                 | 178                 | 237                 | 295                 | 420                |
| Puncture Resistance (min. avge)                       | N                 | ASTM D 4833                                   | 20,000kg   | 228                 | 304                 | 456                 | 608                 | 760                 | 980                |
| Carbon Black Content                                  | %                 | ASTM D 4218                                   | 9,000kg    | 2.0 - 3.0           | 2.0 - 3.0           | 2.0 - 3.0           | 2.0 - 3.0           | 2.0 - 3.0           | 2.0 - 3.0          |
| Carbon Black Dispersion                               | Category          | ASTM D 5596                                   | 20,000kg   | Note <sup>(b)</sup> | Note <sup>(b)</sup> | Note <sup>(b)</sup> | Note <sup>(b)</sup> | Note <sup>(b)</sup> | 1/2 <sup>(b)</sup> |
| Dimesional Stability (each direction)                 | %                 | ASTM D 1204 (120°C/1h)                        | -          | -                   | -                   | -                   | -                   | -                   | ±2                 |
| Melt Flow Index (c)                                   | g/10min           | ASTM D 1238 (190°C / 5.00kg) (190°C / 2.16kg) | -          | -                   | -                   | -                   | -                   | -                   | ≤ 3.0<br>≤ 1.0     |



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## Butek Landline

Containment Solutions

Spec. 22 Rev. C

# Specialist Geomembranes

Technical Data sheet

## Landflex PE-HD Smooth Finish



| Reference Property  |                |                              | 0.75                | 1.00  | 1.50  | 2.00  | 2.50  | 3.00  |
|---|----------------|------------------------------|---------------------|-------|-------|-------|-------|-------|
| Stress crack resistance (NCTL)  | hr             | ASTM D 5397, appendix        | ≥ 500               | ≥ 500 | ≥ 500 | ≥ 500 | ≥ 500 | ≥ 500 |
| Oxidative induction time (OIT) Min.   | °C             | ASTM D 3895 (200C, 02, 1atm) | >100                | >100  | >100  | >100  | >100  | ≥100  |
| UV Resistance <sup>(d)</sup><br>HP-OIT retained after 1600 hrs <sup>(a)</sup> | %              | ASTM D 7238<br>ASTM D 5885   | ≥ 50                | ≥ 50  | ≥ 50  | ≥ 50  | ≥ 50  | ≥ 50  |
| Standard container, roll  | Ea             | ---                          | 15                  | 15    | 15    | 15    | 15    |       |
| Roll Area <sup>(f)</sup>  | m <sup>2</sup> | ---                          | 1960                | 1575  | 1050  | 770   | 595   |       |
| Roll length <sup>(f)</sup>  | m              | ---                          | 280                 | 255   | 150   | 110   | 85    |       |
| Roll Width (approx.) <sup>(f)</sup>   | m              | ---                          | 7.0                 |       |       |       |       | 7.5   |
| Surface   | ---            | ---                          | Double Sided Smooth |       |       |       |       |       |

**NOTES:**

(\*) All values - unless otherwise noted - are nominal values. Values in brackets are minimum values within the 95% confidence interval

(a) Tolerance ± 10% for the lowest individual reading - Special thickness available upon request

(b) Dispersion only applied to near spherical agglomerates. 9 of 10 views shall be category 1 or 2. No more than 1 view from category 3.

(c) Standard test conditions: 190°C / 5.0 kg

(d) Test conditions: 20 hours UV cycle at 75°C followed by 4 hours condensation at 60°C

(e) UV Resistance is based on percent retained value regardless of the original High Pressure - OIT value

(f) Roll widths and lengths have a tolerance of ± 1%



*Gas membrane installation for a retail outlet in Liverpool*



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# ***Butek Landline***

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