DELTA® GARDEN ROOF SYSTEM
with FLORAXX

Water Retention & Drainage Membrane for Garden Roof Systems.
Innovative dimpled structure. Superior compressive strength. 4 functions in one system.

- Water Retention
- Drainage
- Filtration
- Root Barrier

A Safe Foundation for all Herbaceous Roofs.

DELTA® GARDEN ROOF
Water Retention & Drainage Membrane

- DELTA®-FLORAXX
  Octagonal dimples feature extra reinforcing ribs for extreme compressive strength.

- DELTA®-BIOTOP is easily laid over top.

- The growing medium may be applied and planted immediately after installation.

- DELTA®-ROOT BARRIER layer resists root penetration.

- Roof Deck

- Waterproofing Membrane
DELTA® GARDEN ROOF SYSTEM

This innovative dimpled sheet has been developed specifically for green roofs. Thanks to its unique dimple structure and its innovative design, its functions include:

- drainage
- water storage

The sheet helps users to cut costs considerably because it can cover large areas very quickly. DELTA®-FLORAXX is the optimum solution for flat roofs that are to be extensively or intensively planted with greener. The DELTA® GARDEN ROOF SYSTEM integrates the functions of filtration, water storage, and high-performance drainage!

DELTA®-FLORAXX has octagonal dimples that are additionally reinforced by ribs, making it very compression-resistant, so that it will sustain even heavy loads safely. In combination with DELTA®-ROOT BARRIER and DELTA®-BIOTOP, it provides an extremely serviceable and economical foundation for green roofs.

Because the System features DELTA®-BIOTOP, a filtration layer, growing medium may be spread easily on top of it without worry that it will wash away, to be planted according to your choice. Sedum and sedum moss are easiest to look after. The specially designed thickness and strength of DELTA®-ROOT BARRIER will protect the integrity of the waterproofing membrane from aggressive plant roots.

Green roofs are in!

Planting a roof ...

- extends the life of underlying waterproofing membrane.
- minimizes temperature fluctuations within the roof and provides cooling in summer.
- improves roof noise attenuation by up to 8 dB in the interior.
- enhances heat protection and saves valuable heating energy.
- offers a habitat for plants and animals, such as butterflies.
- ensures high water retention and reduces the load on the sewage system.
- serves to eliminate fine dust and pollutants, produce oxygen, and improve the visual and climatic quality of your environment.
- helps meet government and third-party environmental standards for buildings.
DELTA®-FLORAXX
Water Retention and Drainage Membrane for Garden Roofs.™

- Offers high drainage capacity for green roofs.
- Is breathable and water-permeable because of the perforations between the storage dimples.
- Ideal for inverted roofs.
- Is capable of storing 7 l/m² (21.98 fl. oz / ft²) of water as a reserve for periods of draught.
- Can be installed easily and cost-effectively.
- Forms a superior foundation for green roofs together with DELTA®-BIOTOP and DELTA®-ROOT BARRIER.
- Is safe for drinking water and rot proof in growing medium.
- Is part of an excellent storm water management strategy.
- Is the ideal combination of a perforated, dimpled HDPE sheet for drainage and water storage.
- Features the outstanding compressive strength of 200 kN/m² (4,160 psf) and an enlarged water retention capacity thanks to its innovative 20 mm (0.79”) high octagonal dimples.
- Is 2 m (6.6’) wide for faster coverage.
- Permits very long drainage lengths.
- Special dimple construction allows for excellent air circulation, allowing for aerobic plant growth and the formation of strong root systems.
- Is made from 100% recycled HDPE and assists in meeting water management targets.
**DELTA®-BIOTOP**

Soil Retention & Filter Fabric for Garden Roofs.™

- Non-woven geotextile fabric
- Light and easy to handle
- Provides excellent drainage for water
- Allows free air movement
- Helps stabilize and hold growing medium in place
- Maintains water retention capacity
- Prevents clogging of DELTA®-FLORAXX
- Does not rot in contact with growing medium
- Chemically inert and bacteria resistant

---

**DELTA®-ROOT BARRIER**

Root Barrier & Waterproofing Protection Sheet.™

- Specially 15 mil stabilized polyethylene
- High strength to resist penetration from aggressive plant’s roots
- Protects waterproofing membrane
- Allows free drainage
- Withstands jobsite rigors
- Large width to minimize overlaps
- Compatible with asphaltic waterproofing
- Impact resistant and does not absorb water
- Lightweight
- Does not rot in contact with growing medium
- Chemically inert and bacteria resistant
Technical solution overview

DELTA®-FLORAXX – Typical Parapet Detail.

DELTA®-FLORAXX – Typical Roof Drain Detail.

DELTA®-FLORAXX – Typical Roof Perimeter Detail.
DELTA®-FLORAXX
Technical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimple Height</td>
<td>ASTM D6364-06</td>
<td>approx. 0.79 in (20 mm)</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>ASTM D6364-06</td>
<td>4160 psf (200 kN/m²)</td>
</tr>
<tr>
<td>Water Retention Capacity</td>
<td></td>
<td>21.98 fl. oz./ft² (7 l/m²)</td>
</tr>
<tr>
<td>Drain Capacity</td>
<td>ASTM D4716-08</td>
<td>13 gal/min/ft (161 l/min/m)</td>
</tr>
<tr>
<td>Drainage Rate Through Perforations</td>
<td>(1.23 l/s/m²)</td>
<td></td>
</tr>
<tr>
<td>Volume of air between dimples</td>
<td></td>
<td>43.98 fl. oz./ft² (14 l/m²)</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td>Non-toxic, non-polluting</td>
</tr>
<tr>
<td>Temperature Resistance</td>
<td>-22°F to +176°F (-30°C to +80°C)</td>
<td></td>
</tr>
<tr>
<td>Roll Dimensions</td>
<td>6.6' x 65.6' (2 x 20 m)</td>
<td></td>
</tr>
<tr>
<td>Service life expectancy</td>
<td>&gt; 25 years (at pH between 4 and 9 and temperature below 77°F/25°C). The product shall not be exposed to UV light for more than 30 days.</td>
<td></td>
</tr>
</tbody>
</table>

DELTA®-ROOT BARRIER
Technical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td></td>
<td>Green tint</td>
</tr>
<tr>
<td>Thickness</td>
<td></td>
<td>&gt; 0.015 in (&gt; 380 µm)</td>
</tr>
<tr>
<td>Chemical properties</td>
<td></td>
<td>Resistant to chemicals Root-penetration resistant Does not rot when in contact with soil</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td>Non-toxic, non-polluting</td>
</tr>
<tr>
<td>Temperature resistance</td>
<td>-22°F to +122°F (-30°C to +50°C)</td>
<td></td>
</tr>
<tr>
<td>Roll dimensions</td>
<td>84” (U-folded) x 98’ (2.13 m x 29.8 m)</td>
<td></td>
</tr>
<tr>
<td>Product dimensions</td>
<td>168” x 98” (4.26 m x 29.8 m)</td>
<td></td>
</tr>
<tr>
<td>Coverage per product roll</td>
<td>1,372 ft² (127.5 m²)</td>
<td></td>
</tr>
<tr>
<td>Weight per roll</td>
<td>Approx. 100 lbs/roll</td>
<td></td>
</tr>
<tr>
<td>Service life expectancy</td>
<td>&gt; 25 years (at pH between 4 and 9 and temperature below 122°F/50°C). The product shall not be in contact with metal. The product shall not be exposed to UV light for more than 7 days.</td>
<td></td>
</tr>
</tbody>
</table>

DELTA®-BIOTOP
Technical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grab tensile strength</td>
<td>ASTM D4632</td>
<td>130 lbs (578 N)</td>
</tr>
<tr>
<td>Elongation</td>
<td>ASTM D4632</td>
<td>60%</td>
</tr>
<tr>
<td>Trapezoidal tear strength</td>
<td>ASTM D4533</td>
<td>60 lbs (270 N)</td>
</tr>
<tr>
<td>Puncture strength</td>
<td>ASTM D4833</td>
<td>41 lbs (180 N)</td>
</tr>
<tr>
<td>CBR puncture</td>
<td>ASTM D6241</td>
<td>225 lbs (990 N)</td>
</tr>
<tr>
<td>Apparent opening size</td>
<td>ASTM D4751</td>
<td>70 US sieve (0.21 mm)</td>
</tr>
<tr>
<td>Permittivity</td>
<td>ASTM D4491</td>
<td>0.7/sec</td>
</tr>
<tr>
<td>Water flow rate</td>
<td>ASTM D4491</td>
<td>60 gpm/ft² (2.460 l/s/m²)</td>
</tr>
<tr>
<td>Chemical properties</td>
<td></td>
<td>Resistant to chemicals Root-penetration resistant Does not rot when in contact with soil</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td>Non-toxic, non-polluting</td>
</tr>
<tr>
<td>Temperature resistance</td>
<td>-22°F to +140°F (-30°C to +60°C)</td>
<td></td>
</tr>
<tr>
<td>Roll dimensions</td>
<td>62” x 300’ (1.57m x 91.44 m)</td>
<td></td>
</tr>
<tr>
<td>Coverage per roll</td>
<td>1,550 ft² (144 m²)</td>
<td></td>
</tr>
<tr>
<td>Service life expectancy</td>
<td>&gt; 25 years (at pH between 4 and 9 and temperature below 77°F/25°C). The product shall not be exposed to UV light for more than 30 days.</td>
<td></td>
</tr>
</tbody>
</table>
DELTA® protects property, saves energy, creates comfort... from the basement to the roof.

DELTA®-MS UNDERSLAB
Underslab vapor barrier.

DELTA®-REFLEX
Vapor & air barrier.

DELTA®-COOL
Energy conserving phase change materials.

DELTA®-MS
DELTA®-DRAIN
Basement wall protection dimpled sheets.

DELTA®-FOOTING BARRIER
Capillary break for footings.

DELTA®-DRAIN
Underslab vapor barrier.

DELTA® ROOF UNDERLAYMENTS
New ideas for better roofs.

DELTA®-DRY
Ventilated rainscreen.

DELTA® WATER RESISTIVE BARRIERS

DELTA® products from Cosella-Dörken offer a complete building envelope solution to protect homes against moisture damage.

The information printed in this brochure reflects product information and specifications at the date of printing. The manufacturer reserves the right to make changes when necessary.