



DELTA[®] GARDEN ROOF SYSTEM with FLORAXX

**Water Retention & Drainage Membrane
for Garden Roof Systems.**



P R E M I U M Q U A L I T Y



■ Drainage System and Water Retention

■ For Green Roofs

■ For Horizontal Applications

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



SYSTEM with FLORAXX for Garden Roof Systems

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:

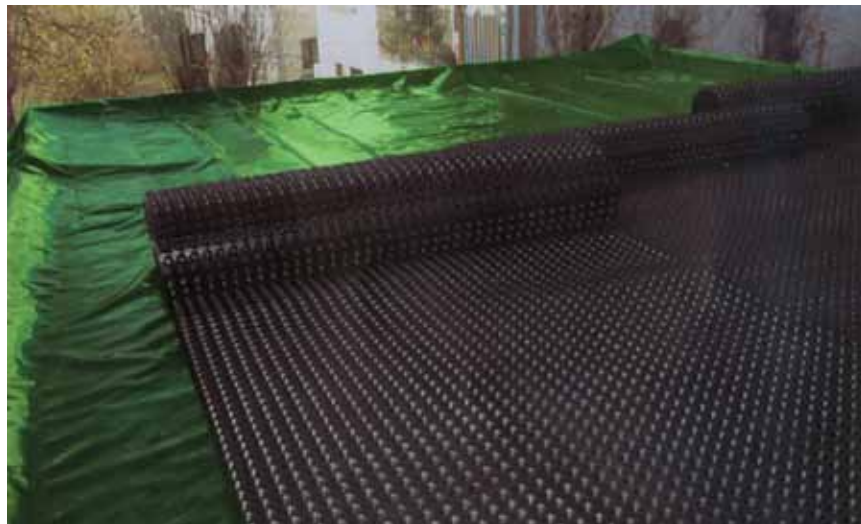
- drainage
- water storage

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 greenery. 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!

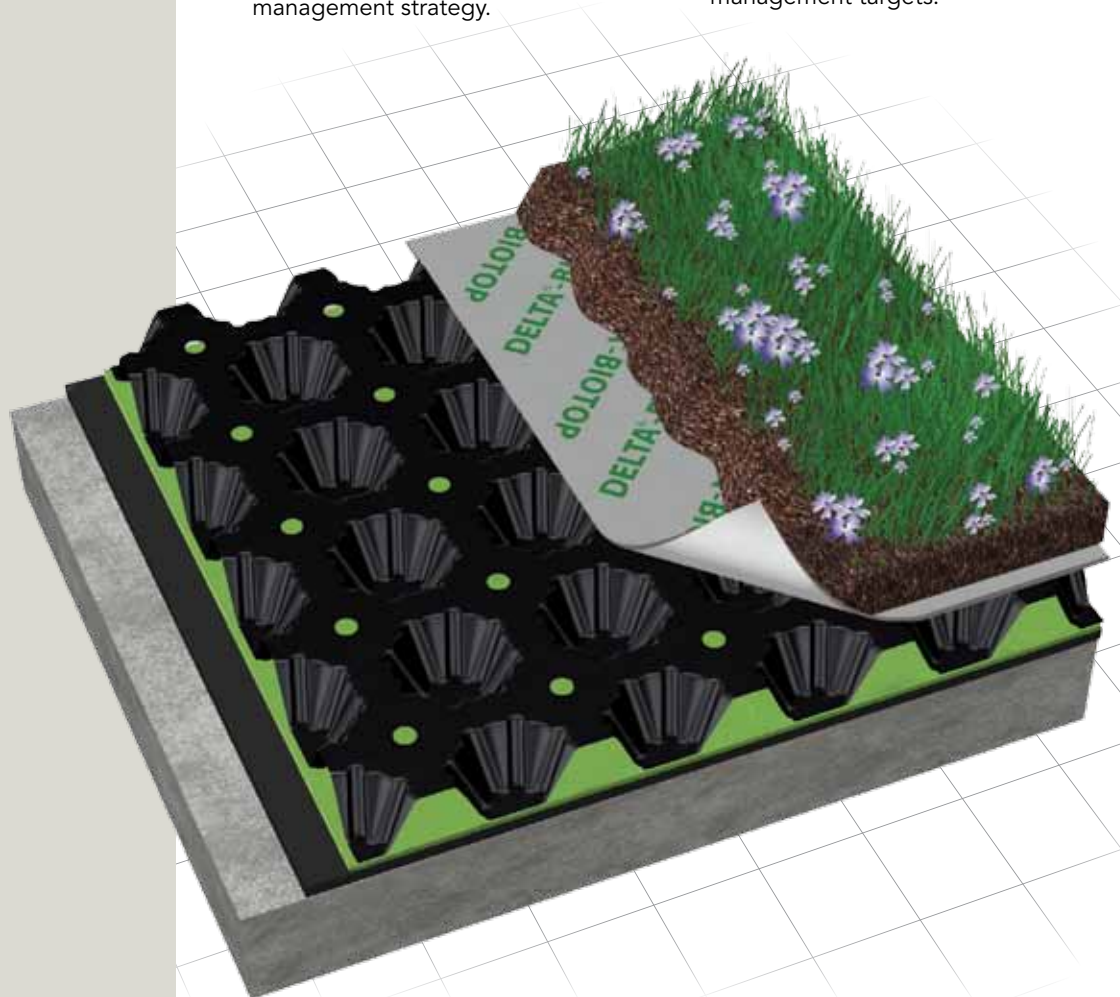
Planting a roof ...

- 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.





Rolls out easily & straight



Quickly & economically



Growing medium may be applied immediately



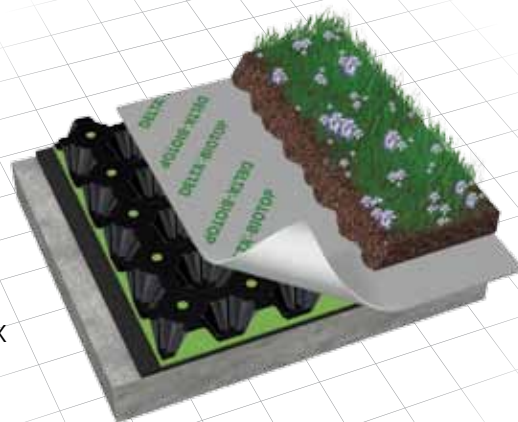
An ideal foundation for planting

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

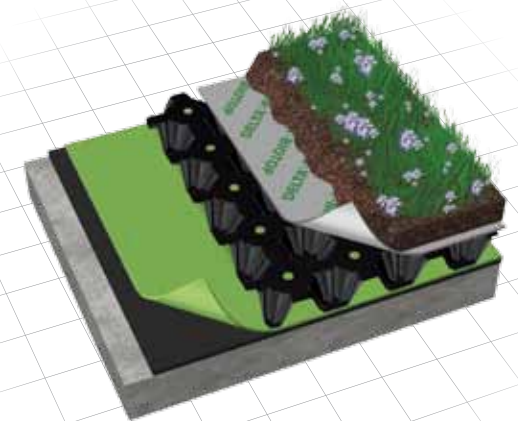


DELTA®-ROOT BARRIER

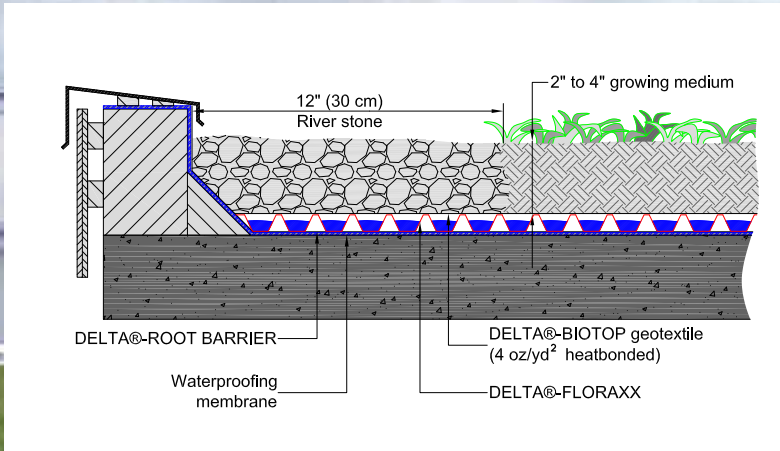
Root Barrier & Waterproofing Protection Sheet.™



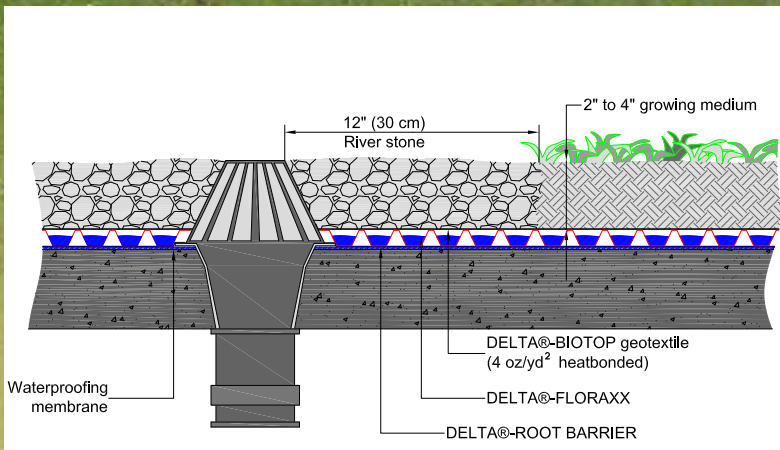
- Specially 15 mil stabilized polyethylene
- High strength to resist penetration from aggressive plant's roots
- Protects waterproofing membrane
- Allows free drainage
- Withstands jobsite rigors
- Large width to minimize overlaps
- Compatible with asphaltic waterproofing
- Impact resistant and does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



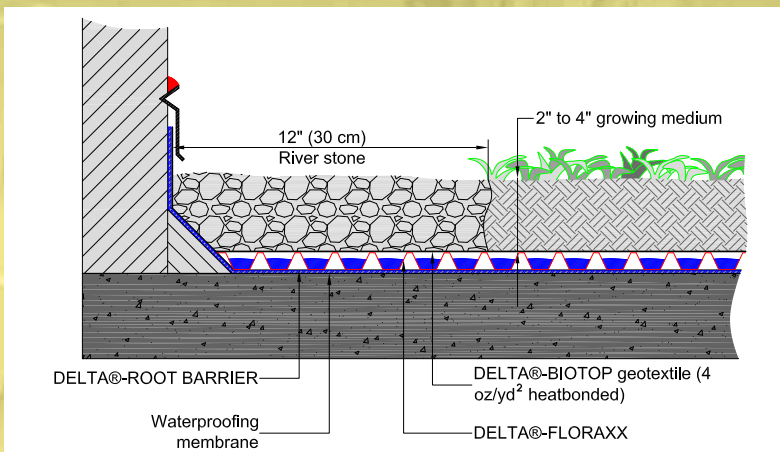
Technical solution overview



DELTA®-FLORAXX – Typical Parapet Detail.



DELTA®-FLORAXX – Typical Roof Drain Detail.



DELTA®-FLORAXX – Typical Roof Perimeter Detail.

DELTA®-FLORAXX

Technical Data

Dimple Height	ASTM D6364-06	approx. 0.79 in (20 mm)
Compressive Strength	ASTM D6364-06	4160 psf (200 kN/m ²)
Water Retention Capacity	21.98 fl.oz./ft ² (7 l/m ²)	
Drain Capacity (Flow rate@ Hydr. grad. 0.02; 5 kPa)	ASTM D4716-08	13 gal/min/ft (161 l/min/m)
Drainage Rate Through Perforations	3.86 fl.oz./ft ² ·s (1.23 l/m ² ·s)	
Volume of air between dimples	43.98 fl.oz./ft ² (14 l/m ²)	
Chemical Properties	Resistant to chemicals Root-penetration resistant Does not rot when in contact with soil	
Toxicity	Non-toxic, non-polluting	
Temperature Resistance	-22°F to + 176°F (-30°C to + 80°C)	
Roll Dimensions	6.6' x 65.6' (2 x 20 m)	
Service life expectancy	> 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 that 30 days.	

DELTA®-ROOT BARRIER

Technical Data

Color	Green tint
Thickness	> 0.015 in (> 380 μm)
Chemical properties	Resistant to chemicals Root-penetration resistant Does not rot when in contact with soil
Toxicity	Non-toxic, non-polluting
Temperature resistance	-22°F to +122°F (-30°C to +50°C)
Roll dimensions	84" (U-folded) x 98' (2.13 m x 29.8 m)
Product dimensions (unfolded)	168" x 98' (4.26 m x 29.8 m)
Coverage per product roll	1,372 ft ² (127.5 m ²)
Weight per roll	Approx. 100 lbs/roll
Service life expectancy	> 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.



DELTA®-BIOTOP

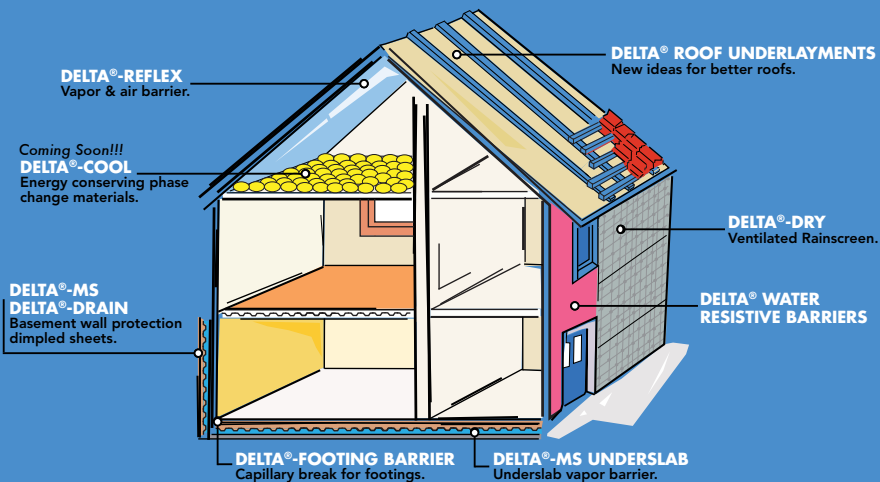
Technical Data

Grab tensile strength	ASTM D4632	130 lbs (578 N)
Elongation	ASTM D4632	60%
Trapezoidal tear strength	ASTM D4533	60 lbs (270 N)
Puncture strength	ASTM D4833	41 lbs (180 N)
CBR puncture	ASTM D6241	225 lbs (990 N)
Apparent opening size	ASTM D4751	70 US sieve size (0.21 mm)
Permittivity	ASTM D4491	0.7/sec
Water flow rate	ASTM D4491	60 gpm/ft ² (2.460 l/s/m ²)
Chemical properties	Resistant to chemicals Root-penetration resistant Does not rot when in contact with soil	
Toxicity	Non-toxic, non-polluting	
Temperature resistance	-22°F to +140°F (-30°C to +60°C)	
Unit weight (typical)	ASTM D5261	4.0 oz/yd ² (135 g/m ²)
Roll dimensions	62" x 300' (1.57m x 91.44 m)	
Coverage per roll	1,550 ft ² (144 m ²)	
Service life expectancy	> 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 that 30 days.	



DELTA®

DELTA® protects property, saves energy, creates comfort ... from the basement to the roof.



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.

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Canadian Home Builders' Association