

DELTA<sup>®</sup> protects property. Saves energy. Creates comfort.

PREMIUM - QUALITY

## Water-retaining drainage sheet with an integrated geotextile for perfect green roofs.

Innovative octagonal dimples for outstanding compressive strength. One sheet for drainage, water storage, and filtration. Easy and quick to lay out straight from the roll.



Also available without geotextile as DELTA<sup>®</sup>-FLORAXX!

■ Drainage system

■ For green roofs

■ For horizontal applications

# DELTA®-FLORAXX TOP

## Technical data overview:

Material	Dimpled HDPE sheet, perforated, with fused-on PP geotextile (DELTA®-FLORAXX TOP) dimpled HDPE sheet, perforated (DELTA®-FLORAXX).
Dimple height	c. 20 mm
Air gap	c. 14 l/m <sup>2</sup>
Compressive strength	c. 200 kN/m <sup>2</sup> (EN ISO 604)
Lateral water permeability	c. 10 x 10 <sup>-3</sup> m <sup>2</sup> /s (10 l/s · m) (EN ISO 12958)
Vertical water permeability	c. 1,2 l/m <sup>2</sup> · s
Water storage capacity	c. 7 l/m <sup>2</sup>
Operating temperature range	- 30 °C to + 80 °C
Characteristic opening size, geotextile	c. 0,15 mm (EN ISO 12956) (DELTA®-FLORAXX TOP)
Water permeability, geotextile	c. 0,08 m/s (EN ISO 11058) (DELTA®-FLORAXX TOP)
CE conformability	DIN EN 13252, test report TBU 1.1/13525/0580.0.1-2009 (DELTA®-FLORAXX TOP); DIN EN 13252, test report no. 1.1 / 13525 / 0394.01-2009 (DELTA®-FLORAXX)
Roll size	10 m x 2 m, cloth width 2,10 m (DELTA®-FLORAXX TOP); 20 m x 2 m (DELTA®-FLORAXX)

# DELTA® Accessories

**Dörken makes your life easier. Systematically.**

This is why you are sure to appreciate these handy DELTA® accessories:



## DELTA®-FLORAXX connector

Each DELTA®-FLORAXX pallet comes with a connector and 150 rivets. Simply insert a rivet into the tool and pierce 2 sheets between the dimples to join them. Keeps sheets from springing back and produces an absolutely impact-resistant connection (c. 5 rivets/2 m of butt length).

## DELTA®-BIOTOPVLIES

Forms an optimum foundation for green roofs together with DELTA®-FLORAXX.

# DELTA®



## DELTA®System ...

### ... for owners:

„ ... What I get is a mature problem solution provided at a fair price by the top specialist in quality branded products!“

### ... for craftsmen:

„ ... What I get is a complete system made by a single manufacturer that enables me to do anything to the owner's entire satisfaction. There is no safer way!“

### ... for planners:

„ ... I can be certain that both innovative and standard products will be used in implementing my roof and cellar plans in a systematic and forward-looking way!“



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A company of the Dörken Group

■ **Standard requests for tender** as well as detailed installation instructions for all DELTA® products may be obtained at [www.doerken.de](http://www.doerken.de) as pdf files for you to print out and save.

■ **DELTA® System guides** on roof construction, conversion, rehabilitation, and retiling as well as on dry cellars may be requested by fax.



**The innovative dimpled sheet for horizontal green roofs: 3 functions in one!**

**A safe foundation for all herbaceous roofs**

# DELTA®-FLORAXX TOP

**3 layers in one sheet. Innovative dimpled structure**



**DELTA®-FLORAXX TOP**

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

- drainage
- water storage, and
- an integrated filtration layer on top.

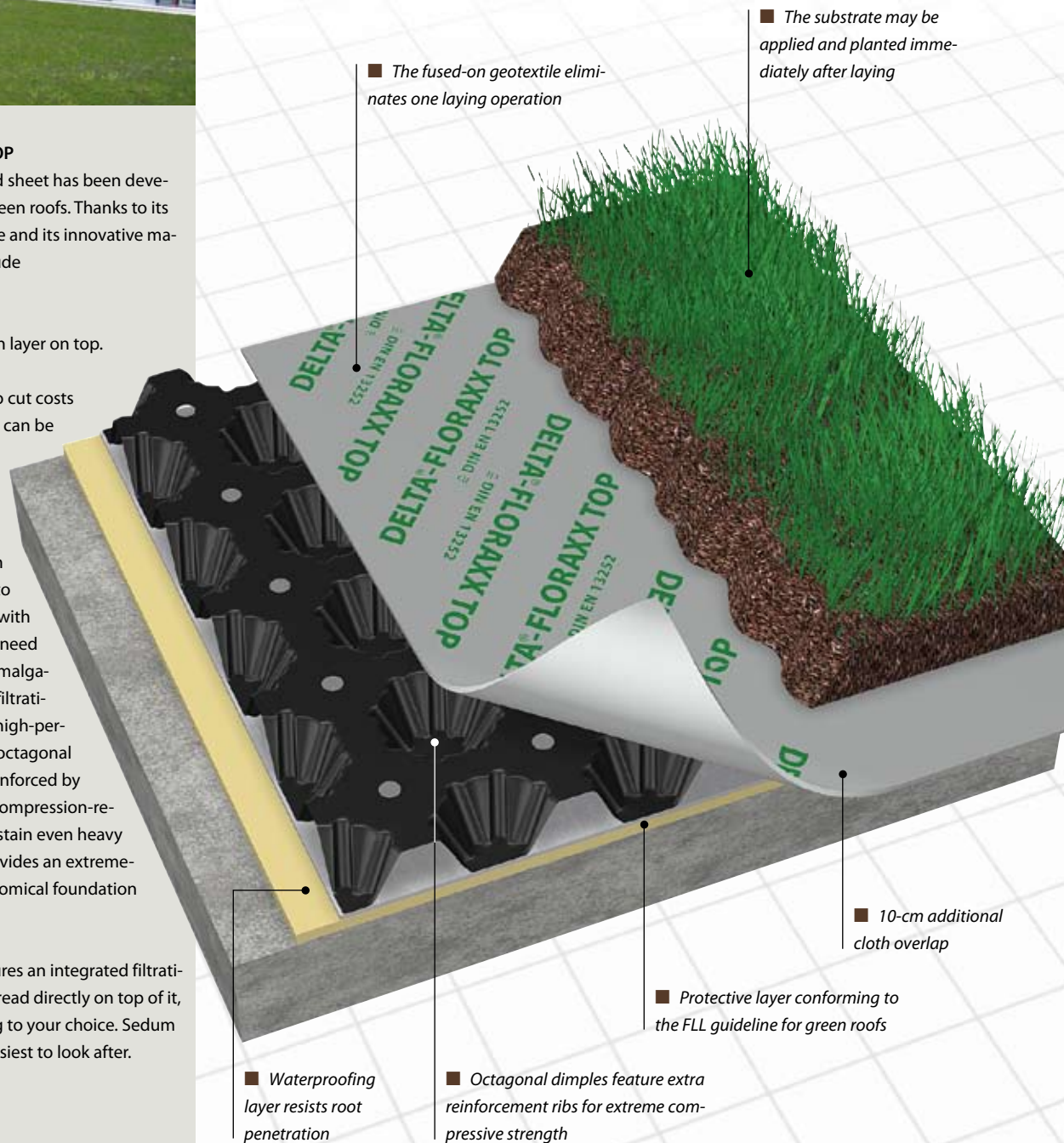
The sheet helps users to cut costs considerably because it can be easily laid out straight from the roll.

DELTA®-FLORAXX TOP is the optimum solution for flat roofs which are to be extensively planted with greenery that does not need much care. This sheet amalgamates the functions of filtration, water storage, and high-performance drainage! Its octagonal dimples additionally reinforced by ribs make it unusually compression-resistant, so that it will sustain even heavy loads safely. Thus, it provides an extremely serviceable and economical foundation for green roofs.

Because the sheet features an integrated filtration layer, soil may be spread directly on top of it, to be planted according to your choice. Sedum and sedum moss are easiest to look after.

All DELTA® branded quality products are made by Dörken.

PREMIUM - QUALITY



■ The fused-on geotextile eliminates one laying operation

■ The substrate may be applied and planted immediately after laying

■ Waterproofing layer resists root penetration

■ Octagonal dimples feature extra reinforcement ribs for extreme compressive strength

■ Protective layer conforming to the FLL guideline for green roofs

■ 10-cm additional cloth overlap



Easy to roll out.

Joining sheets with DELTA®-FLORAXX connecting elements.

Substrate may be applied immediately.

# TOP

## Structure. Superior compressive strength.

### DELTA®-FLORAXX TOP ...

- ... ideally combines a perforated, dimpled HDPE sheet and a fused-on PP geotextile.
- ... features the outstanding compressive strength of 200 kN/m<sup>2</sup> and an enlarged water retention capacity thanks to its innovative 20-mm-high octagonal dimples.
- ... eliminates an entire laying operation because of its integrated geotextile, on which substrate can be spread immediately after the sheet has been rolled out.
- ... forms a consistent homogenous surface without the problems caused by loose cloth layers slipping, shifting, or being blown about by the wind.
- ... is capable of retaining 7 l/m<sup>2</sup> of water as a reserve for periods of draught.
- ... may also be used on green inverted roofs because it is breathable (S<sub>a</sub> value: c. 0.4 m).
- ... is CE-conformable as per DIN EN 13252 and meets the requirements of the FLL guideline for green roofs.
- ... is 2 m wide and features an extra 10-cm cloth overlap.
- ... permits very great drainage lengths.
- ... may be easily and safely joined with the enclosed DELTA®-FLORAXX connecting elements.



Fast, cost-efficient laying thanks to the integrated geotextile.



## Green roofs are in!

### Planting a roof ...

- ... extends the life of underlying sheets.
- ... minimises temperature fluctuations within the roof and provides cooling in summer.
- ... improves roof noise attenuation by up to 8dB 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.



Laid out straight off the roll,

quickly and directly,

an ideal foundation for planting.

# DELTA®-FLORAXX

## Water-retaining drainage sheet for accessible inverted roofs.

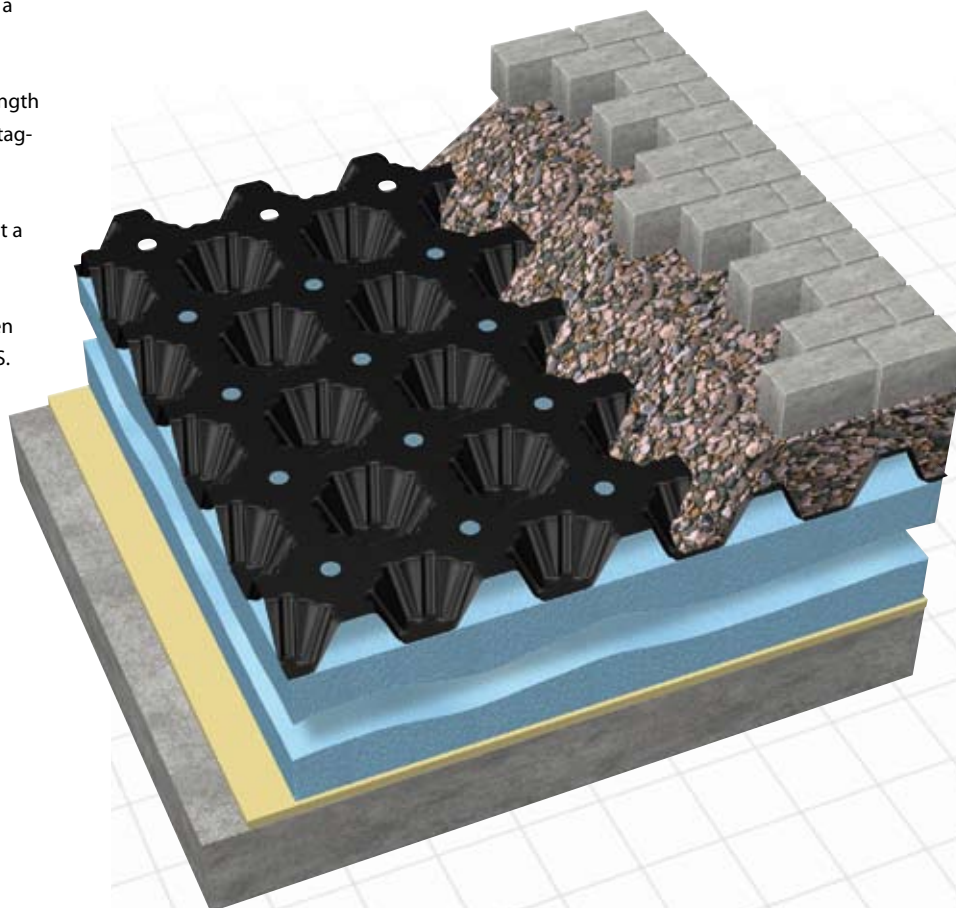
DELTA®-FLORAXX is used on inverted roofs to drain water away from insulation panels under accessible surfaces. Thanks to its breathable perforation and its dimples, water and air may circulate freely on the underside so that no coherent film of water can form on the insulation. This sheet may be used in extensively planted as well as in accessible inverted roofs covered with paving stones or slabs.

### DELTA®-FLORAXX ...

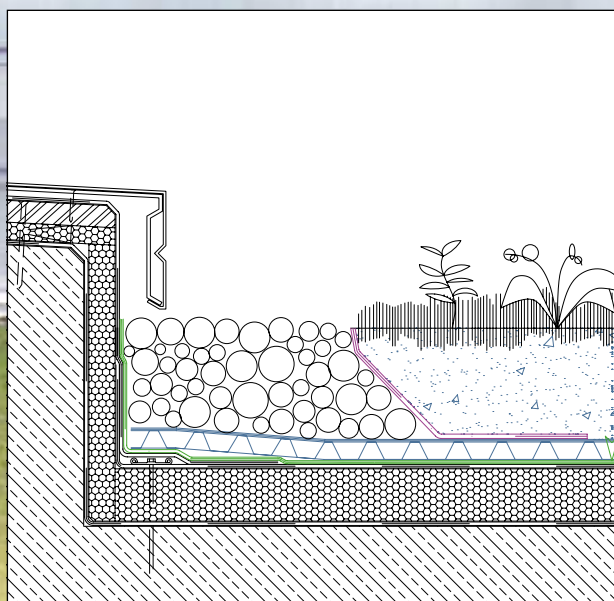
- ... offers high drainage capacity for green roofs.
- ... is breathable and water-permeable because of the perforation between the storage dimples and has an  $S_d$  value of c. 0.4 m – ideal for inverted roofs.
- ... is capable of storing 7 l/m<sup>2</sup> of water as a reserve for periods of drought.
- ... features the unusual compressive strength of 200 kN/m<sup>2</sup> thanks to its innovative octagonal dimples.
- ... can be laid easily and cost-efficiently at a rate of 40m<sup>2</sup> per roll.
- ... forms an excellent foundation for green roofs together with DELTA®-BIOTOPVLIES.
- ... is safe for drinking water and rot-proof in soil.
- ... is CE-conformable as per EN 13252.



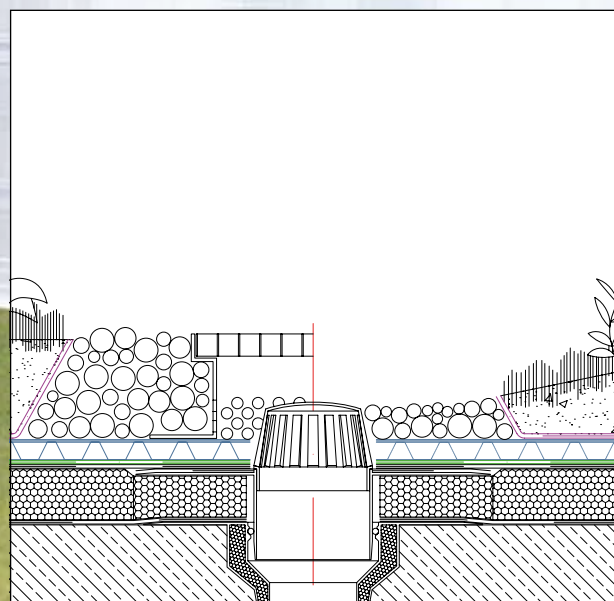
Optimum handling properties.



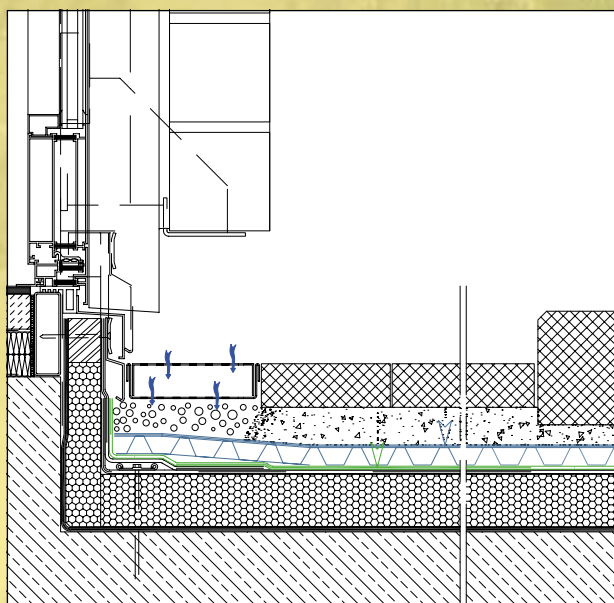
## Technical solution overview



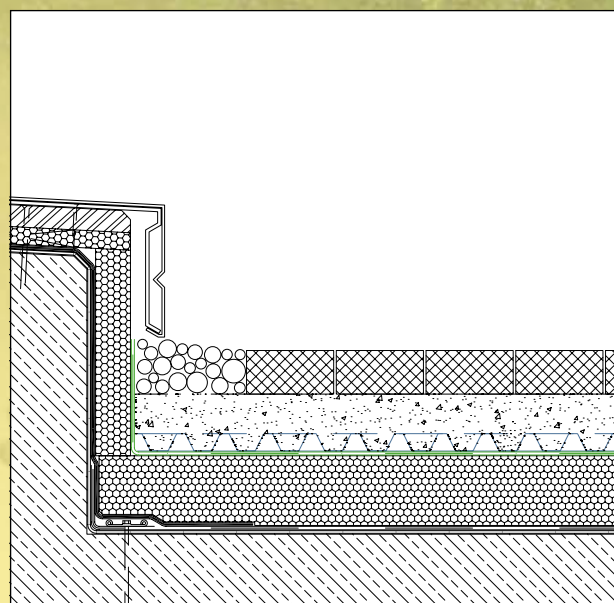
*DELTA®-FLORAXX TOP – fascia with metal cover.*



*DELTA®-FLORAXX TOP – roof drain connection.*



*DELTA®-FLORAXX TOP – barrier-free door with outlying box gutter.*



*DELTA®-FLORAXX – accessible inverted roof covered with paving stones or slabs, metal-covered fascia.*

**Because of its disproportionately high drainage capacity, DELTA®-FLORAXX TOP is suitable for great drainage lengths and, by the same token, for roofs with an unusually low gradient.**

Possible drainage lengths		
Gradient	Drainage capacity	Maximum drainage lengths
1 %	0,86 l/sm	40 m
2 %	1,2 l/sm	55 m
3 %	1,5 l/sm	70 m