

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

PREMIUM QUALITY

## DELTA<sup>®</sup>-NP DRAIN

**Keeps its shape perfectly even under high pressure!**

Compact two-ply composite sheet.  
High drainage capacity through specially-configured dimples.



■ Protection and drainage system

■ For building, underground, and civil-engineering construction

■ For vertical and horizontal installation

**Top safety in vertical and horizontal applications:  
DELTA® System – naturally!**



■ **DELTA®-NP DRAIN**

With its high compressive strength, this drainage and waterproofing system solves every problem: Whether installed vertically or horizontally, DELTA®-NP-DRAIN sheets guarantee maximum safety in damp proofing applications.

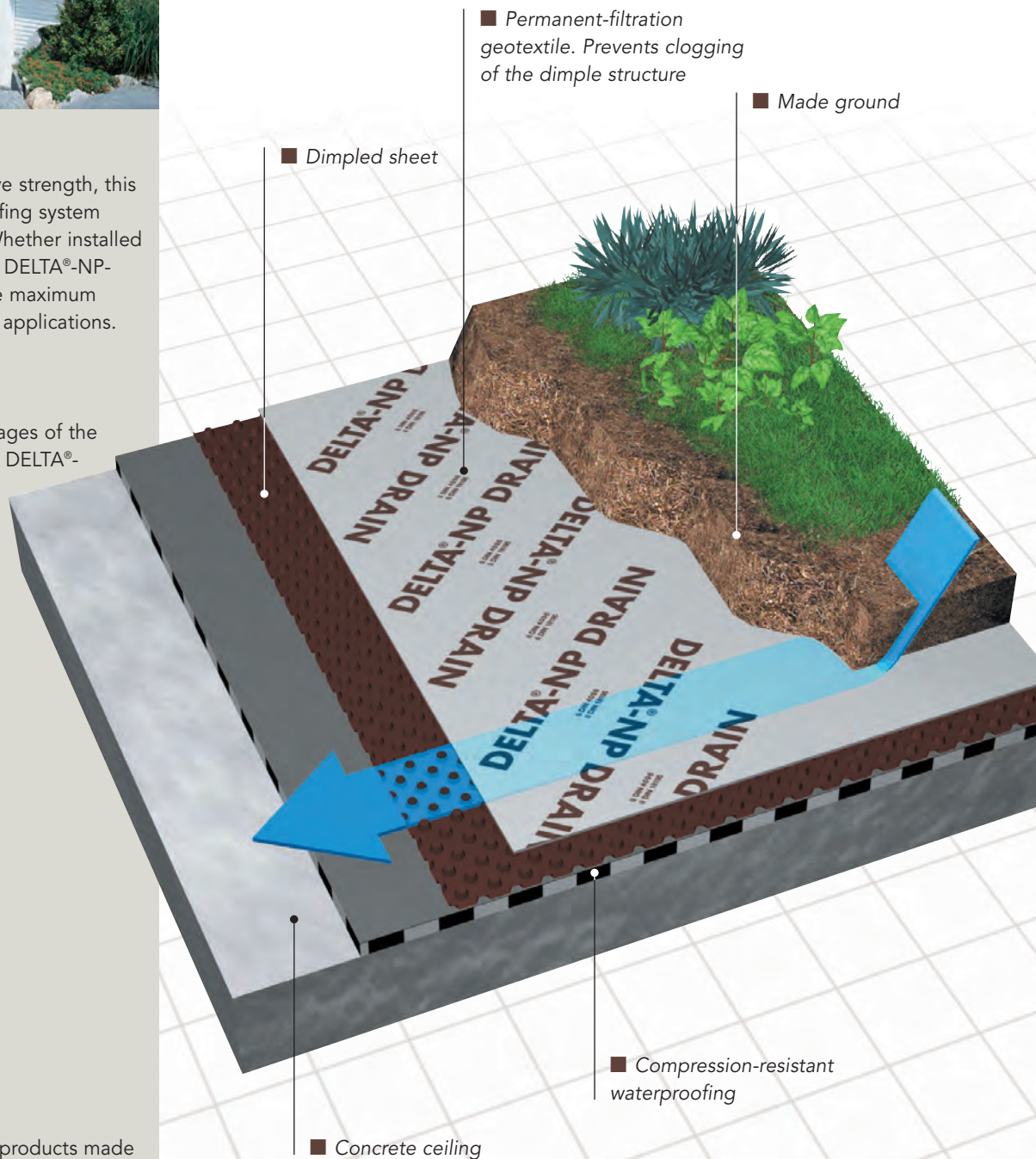
■ **DELTA®-Accessories**

Why not use the advantages of the comprehensive range of DELTA®-Accessories:  
DELTA®-NOPPEN-BAHNEN-PROFIL,  
DELTA®-HAFTNAGEL  
and DELTA®-MS DÜBEL.

**Better safe than sorry:**

# DELTA®-NP DRAIN

## Constant water drainage. Rot-



DELTA® quality branded products made by Dörken.



Reliable vertical and horizontal drainage in civil engineering.

Non-deformable, impact-resistant sheets.

High compression resistance even under high loads.

# proof. Cost-efficient installation.

## DELTA®-NP DRAIN ...

- ... consists of a dimpled sheet with a high compressive strength of approx. 150 kN/m<sup>2</sup> and a special geotextile.
- ... offers dependable vertical and horizontal drainage in civil-engineering buildings, retaining walls of all kinds, open tunnels, and underground parking lots.
- ... protects garden roofs over underground parking lots and green parking decks from moisture. The dimpled sheet prevents water logging and offers greater protection from root penetration. Because of its high compressive strength, the material will bear the weight of a man easily.
- ... features a geotextile layer which filters out fine soil particles, thus ensuring a constant flow of water down to the drainage pipe.
- ... is rot-proof, impact-resistant, and non-deformable.
- ... consistently relieves hydrostatic pressure on the waterproofing layer.
- ... features a high drainage capacity.
- ... may be installed easily and cost-efficiently thanks to its flat edge.
- ... awarded the "Avis Technique du CSTB n° 7/03-1367" test certificate.
- ... awarded the CE 0799-CPD-13 seal and conforms to the requirements of DIN EN 13252.



DELTA®-NP DRAIN for easy, fast, and cost-efficient installation.



## Important Information for Horizontal Applications.

When integrated in soil-covered ceilings, consideration should be given to the following gradient and drainage-rate characteristics, which apply under a load of 20 kN/m<sup>2</sup>:

Gradient	Drainage Rate	Drainage Length
2 %	0,15 l/(s · m)	16 m
3 %	0,20 l/(s · m)	22 m

After laying, the sheet will bear the weight of a wheelbarrow easily when uncovered, and that of a wheeled loader when covered at a thickness of 40 cm minimum.

Minimum surfacing thickness required to support vehicles:

Vehicle Type	Surfacing Thickness
Passenger cars	≥ 15 CM
Trucks 3/3	≥ 15 CM
Trucks 6/6	≥ 25 CM
Trucks 9/9	≥ 35 CM
Trucks 12/12	≥ 40 CM
Trucks 16/16	≥ 45 CM
Heavy trucks 30	≥ 45 CM
Heavy trucks 60	≥ 65 CM

**Please note:** Where heavier loads are involved, please contact our engineering department.

# DELTA®-NP DRAIN

## Technical Data Overview:

Dimpled sheet material	HD-PE
Geotextile material	Polypropylene
Dimple height	approx. 8 mm
Compressive strength	approx. 150 kN/m <sup>2</sup>
Drainage rate	approx. 2.25 l/s · m
Service temperature range	-30 °C to +80 °C
Roll size	12.50 m x 3.0 m, 20 m x 2.0 m

# DELTA®-Accessories for DELTA®-NP DRAIN.

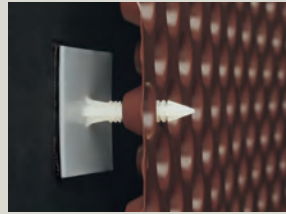
Dörken makes your life easier – systematically.

You are sure to appreciate these handy DELTA®-Accessories:



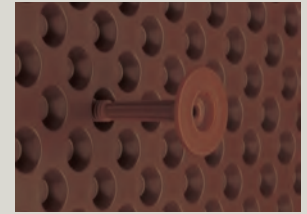
## DELTA®-NOPPENBAHNEN-PROFIL

Edge sealing strip.



## DELTA®-HAFTNAGEL

Self-adhesive pin aids installation.



## DELTA®-MS DÜBEL

Plastic nail plug for attaching sheets to very hard masonry.

# 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 workers:

" ... 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 and detailed installation instructions for all DELTA® products may be obtained from [www.doerken.de](http://www.doerken.de) as PDF files for you to print out and save.