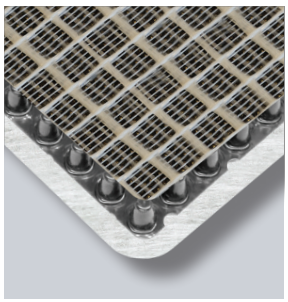
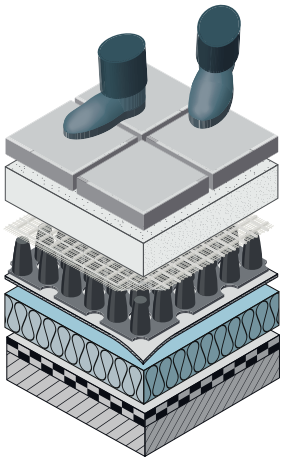
TECHNICAL DATA SHEET

ND Trasdrain 200hsv Drainage System



ND Trasdrain 200hsv
Drainage System



Composition with ND Trasdrain
200hsv Drainage System

High-performance CE-marked drainage system with an innovative dimple design made out of recycled high impact polystyrene. The core of the ND Drainage System is a perforated, vapour-permeable dimpled sheet with a high compressive strength, an excellent creep resistance guaranteeing a consistent long-term drainage capacity and a construction height of approx. 16.5 mm.

A special glass-fibre, double-woven geotextile is bonded to each dimple as a filter layer. Because of the special glass-fibre, double-woven geotextile this drainage system can be used underneath a solid laid pavement on a substrate made of a no fines concrete or loose laid in a substrate of gravel or grid. Limescale from the no-fines concrete cannot clog the special double-woven geotextile. The drainage system can also be used for the installation of ceramics in a thin-substrate bed of ceramic tile adhesive. A vapour-permeable geotextile is glued to the back of the perforated core as a separation and protection layer to protect the waterproofing membrane and to allow water to be drained in to the sub-base. Both geotextiles are glued and not thermally bonded to the dimpled core to avoid damage to the mechanical and hydraulic properties of the geotextile and the drainage system.

Application

- Outdoor floor coverings with fixed installation (on mortar bed)
- Outdoor floor covering with loose installation (on loose aggregate or gravel bed)

Advantages

- Prevents: efflorescence on the surface of the paving, frost damage to the paving (chipping), cracks in the paving due to decoupling the substrate/paving from the sub-base, rotting of wood panels and staining of the pavement
- Speeds up drying of the structure
- Create a capillary break in the build-up

Properties

- Material dimpled sheet: recycled high impact polystyrene (HIPS)
- Material filter geotextile: glass-fibre, double-woven
- Material vapour-permeable geotextile: polypropylene (PP) and polyethylene (PE)
- Construction height: approx. 16.5 mm
- Compressive strength: approx. 450 kPa
- Perforations/m²: approx. 1,540 / ø 6.3 mm
- Weight: approx. 1,133 g/m²
- Drainage capacity at fall ratio 1 % at 100 kPa: approx. 0.54 l/(s.m)
- Drainage capacity at fall ratio 2 % at 100 kPa: approx. 0.95 l/(s.m)

Product	Dimensions (L x W)	Packaging
ND Trasdrain 200hsv Drainage System	approx. 30 m x 1.25 m	approx. 37.5 m², roll

NOPHADRAIN®
SMART GREEN ROOF SYSTEMS

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Data sheet **DoPNDTrasdrain200hsv-003** **ND TRASDRAIN 200hsv**

Material Properties	Standard	Unit	Performance
Core	-	-	HIPS
Filter geotextile	-	-	Glass fiber
Separation film	-	-	-
Separation geotextile	-	-	PP/PE
Mechanical Properties (mean values)			
Compressive strength	hEN ISO 25619-2	kPa	500
Compressive strength at 10 % deformation	hEN ISO 25619-2	kPa	-
Deformation at 1 mPa	hEN ISO 25619-2	%	-
Tensile strength [1] (MD/CMD) [2]	hEN ISO 10319	kN/m	61.69 / 48.47
CBR puncture resistance [1]	hEN ISO 12236	kN	3.46
Dynamic performation (cone drop)	hEN ISO 13433	mm	12.6
Resistance to weathering [3]	hEN ISO 12224	%	60/80
Physical Properties			
Construction height at 2 kPa	-	mm	16.5
Dimple height at 2 kPa	-	mm	15.5
Perforations per m²	-	-	1.540
Diameter perforations	-	mm	6.3
Water reservoir	-	l/m²	-
Material dimensions (L x W)	-	m	30 x 1.25
Mass per unit area	-	g	1,133
Surface area per roll	-	m²	37.5
Roll diameter	-	cm	83
Roll weight	-	kg	42
Hydraulic Properties (mean values)			
Opening size O_{90} [1]	hEN ISO 12956	µm	560
Water permeability H_{50} [1]	hEN ISO 11058	mm/s	34
Drainage Capacity (mean values)			
Vertical drainage / Wall - gradient i=1			
Surface load **Build-in-depth**			
20 kPa 2.0 m	hEN ISO 12958 [4]	l/(s.m)	-
30 kPa 3.0 m	hEN ISO 12958 [4]	l/(s.m)	-
50 kPa 5.0 m	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa 10.0 m	hEN ISO 12958 [4]	l/(s.m)	-
200 kPa Exceptional	hEN ISO 12958 [4]	l/(s.m)	-
Horizontal drainage / Roof			
Fall = 0 % - Exceptional case			
≤ 2 kPa - extensive green roof	FH Karlsruhe (D) [5]	l/(s.m)	-
≤ 10 kPa - intensive green roof	FH Karlsruhe (D) [5]	l/(s.m)	-
Fall = 1 % - Exceptional case			
≤ 10 kPa - extensive green roof	hEN ISO 12958 [4]	l/(s.m)	0.54
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	0.54
200 kPa - parking roof deck	hEN ISO 12958 [4]	l/(s.m)	-
Fall = 1.5 %			
≤ 10 kPa - extensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	-
200 kPa - parking roof deck	hEN ISO 12958 [4]	l/(s.m)	-
Fall = 2 %			
≤ 10 kPa - extensive green roof	hEN ISO 12958 [4]	l/(s.m)	0.96
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	0.95
200 kPa - parking roof deck	hEN ISO 12958 [4]	l/(s.m)	-
Fall = 2.5 %			
≤ 10 kPa - extensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	-
200 kPa - parking roof deck	hEN ISO 12958 [4]	l/(s.m)	-
Fall = 3 %			
≤ 10 kPa - extensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	-
200 kPa - parking roof deck	hEN ISO 12958 [4]	l/(s.m)	-

[1] Performance expressed of the filter/geotextile only
[2] MD = Machine direction / CMD = Cross Machine Direction
[3] Material has to be completely covered within 14 days after installation
[4] hEN ISO 12958 tested hard/soft
[5] FH Karlsruhe (D) tested hard/hard

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