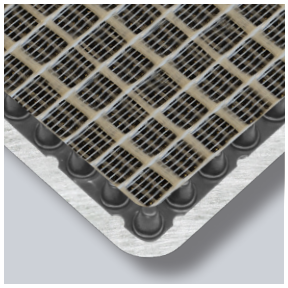
TECHNICAL DATA SHEET

ND Trasdrain 200sv Drainage System



ND Trasdrain 200sv 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. 13 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)
- Construction height: approx. 13 mm
- Compressive strength: approx. 700 kPa
- Perforations/m^2: approx. 1,540 / ø 6.3 mm
- Weight: approx. 1,132 g/m^2
- Drainage capacity at fall ratio 1 % at 100 kPa: approx. 0.36 l/(s.m)
- Drainage capacity at fall ratio 2 % at 100 kPa: approx. 0.62 l/(s.m)

Product	Dimensions (L x W)	Packaging
ND Trasdrain 200sv Drainage System	approx. 32 m x 1.25 m	approx. 40 m^2, roll

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NOPHADRAIN®
SMART GREEN ROOF SYSTEMS

Data sheet	DoPNDTrasdrain200sv-004	ND Trasdrain 200sv	
Material Properties	**Standard**	**Unit**	**Performance**
Core	-	-	HIPS
Filter geotextile	-	-	glass fiber
Separation film	-	-	-
Separation geotextile	-	-	PP
Mechanical Properties (mean values)			
Compressive strength	hEN ISO 25619-2	kPa	700
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	3.5
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	13
Dimple height at 2 kPa	-	mm	12
Perforations per m²	-	-	1,540
Diameter perforations	-	mm	6.3
Water reservoir	-	l/m²	-
Material dimensions (L x W)	-	m	1.25 x 32
Mass per unit area	-	g	1,133
Surface area per roll	-	m²	40
Roll diameter	-	cm	75
Roll weight	-	kg	45
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)	4.89
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)	0.37
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	0.36
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)	0.66
≤ 20 kPa - intensive green roof	hEN ISO 12958 [4]	l/(s.m)	-
100 kPa - podium roof deck	hEN ISO 12958 [4]	l/(s.m)	0.62
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

The values correspond to average results obtained in our laboratories and outside institutes and are indicative. The right is reserved to make changes at any time without notice. Standard variations in mechanical properties of 15 % and in hydraulic properties of 20 % and in physical properties of 5 % are normal.

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V03.2026