

## TECHNICAL DATA SHEET

### ND WSE hd / ND WSE lt Series Water Retention Elements

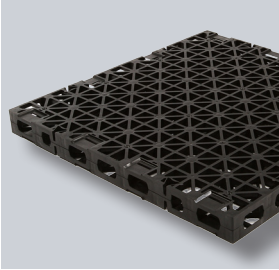


Image shows example of  
ND WSE-50hd

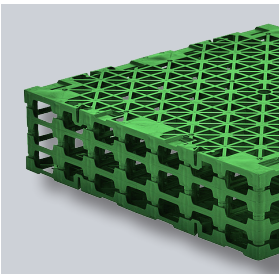


Image shows example of  
ND WSE-150lt

Water storage and retention elements made of polypropylene for surface drainage and water buffering used in the Nophadrain Systems for intensive green and trafficable roofs. Due to the special design, the water retention elements can also be used on inverted roofs. The elements can be combined with flow restrictors (e.g. ND AFC-200) for the suitable regulation of drainage.

#### Applications

Both series are designed for the use under heavy structures on roofs without fall and are therefore suitable for temporary storage or water buffering of excess water caused by possible discharge restrictions into the sewerage system due to e.g. heavy rain.

The elements of both series are available in different heights. The required amount of water buffer can be achieved by choosing the right build-up height; provided that the water buffer is in compliance with the local building regulations. To establish targeted definitions of the discharge volume the appropriate throttle system can be combined with an adjustable flow control system (e.g. ND AFC-200) can be combined with a water retention build-up.

The ND WSE hd Water Retention Elements are suitable for SLW60 and due to its high compressive strengths the appropriate system for the use under traffic areas. The elements of the ND WSE lt series are designed for SLW30 and therefore suitable for the use in intensive green roofs and light trafficable (pedestrian) areas. With increased demands on the water supply to the vegetation, products of the ND WSE lt series can also be used for permanent water buffering.

For protection of the waterproofing membrane, ND TSF-100 Slip and Protection Sheet has to be placed underneath the ND WSE lt / hd Water Retention Element. In case of an inverted roof the ND TSF-100 has to be exchanged by the ND 100sv Drainage System. As filter layer, the ND FV-300 Filter Geotextile has been used.

#### Accessories

The products from the ND WSE series need to be interlocked with special connectors in order to assure best force transmission. For the ND WSE elements with heights of 50 and 80 mm use the Connector Small; for heights 100 and 150 mm use Connector Large. Recommended quantity: for ND WSE-lt: 6 connectors per m<sup>2</sup>; for ND WSE-hd: 12 connectors per m<sup>2</sup> (available per bag [50 pieces]).

#### Properties

- Material: 100% recycled PP regenerate (polypropylene)
- Cavity volume: approx. 95%
- Open surface: > 63%
- Durability: 50 years

Build-up height [mm]	Dimensions (L x W)	ND WSE hd Serie		ND WSE lt Serie	
		Compressive strength* [kN/m <sup>2</sup> ]	Weight [kg/piece]	Compressive strength* [kN/m <sup>2</sup> ]	Weight [kg/piece]
50	approx 0.6 m x 0.6 m	≥1,050	≥1.6	>500	>1.5
80	approx 0.6 m x 0.6 m	≥1,050	≥2.1	>500	>2.0
100	approx 0.6 m x 0.6 m	≥700	≥2.5	>400	>2.4
150	approx 0.6 m x 0.6 m	≥500	≥3.5	>400	>3.4

\*Values were determined on a full-contact (top/bottom) press. The test speed is 10 mm/min and the temperature is approximately 23+ / -2 ° C.

**nophadrain**<sup>®</sup>  
SMART GREEN ROOF SYSTEMS

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