

PRODUCT DATA SHEET

Hydrorock® blocks

Stone wool blocks for water management



Material description

Blocks produced from stone wool for use in water management applications.

Physical characteristics

Parameter	Value			Unit of measurement
	D-density 75kg/m ³	HD-density 120 kg/m ³	HDX-density 160 kg/m ³	
Height (variabel)	33 50 100	33 50 100	33 50 100	cm
Length	120	120	120	cm
Thickness	30 40	30 40	30	cm
Weight H 50	13,5 17,5	21,5 28,8		kg/block

Water properties

Parameter	Value			Unit of measurement
	D-density 75kg/m ³	HD-density 120 kg/m ³	HDX-density 160 kg/m ³	
Porosity	97	95	94	%vol
Water permeability	> 200	~ 200	> 150	m/day
Free suction height	15	-	-	cm
Field capacity (water content at 100 cm water column)	6	-	-	%vol

Practical consequences

- During heavy rainfall, water absorption is so fast that special venting facilities are required. Connecting the venting pipes to a drain well or gully every 100 meters is sufficient for proper operation.
- The underlying soil has a capillary force that is higher than that of stone wool. Water will therefore infiltrate into the surrounding soil. The stone wool is not the limiting factor here. The contact surface between the infiltration blocks and the bottom can be adjusted by a specific design of the buffer, so that the water is infiltrated within 24 hours.
- If the stone wool buffer is only used for buffering water and delayed drainage, so if no infiltration takes place, the bottom 15 cm of the buffer will not drain completely. One should take this into account when calculating the capacity of the system.
- If the amount of rain exceeds the design capacity, other water management solutions will be needed to limit nuisance.

Load strength

Parameter	Value			Unit of measurement
	D-density 75kg/m ³	HD-density 120 kg/m ³	HDX-density 160 kg/m ³	
Creep	< 10	< 8	< 6	%
Static compressive strength	26	77	147	kPa
	> 2	>7	> 14	ton/m ²
Cyclic triaxial compressive strength	15	44	85	kPa
	> 1	> 4	> 8	tons/m ²

Practical consequences

The systems can be designed for various strengths. Depending on the type of stone wool and the soil conditions, typical installation depths for the various traffic classes are shown in the table below.

Traffic class ¹ (cyclic / short term)	Installation depth (top from buffer to ground level)			Unit of measurement
	D-density 75kg/m ³	HD-density 120 kg/m ³	HDX-density 160 kg/m ³	
VOSB 18 / 30	70	45	35	cm
VOSB 30 / 30	N/A	60	40	cm
VOSB 30 / 45	N/A	65	40	cm
VOSB 45 / 45	N/A	90	50	cm

The installation depth consists of the following layers:

- 10 cm paving stones or asphalt
- 25 cm foundation (rubble granulate)
- Variable layer thicknesses of sand

Note 1

Traffic class	Axle load [kN]	(single) Wheel load [kN]	Wheel print [m x m]
VOSB 18	60	15	0.11 x 0.25
VOSB 30	100	25	0.16 x 0.25
VOSB 45	150	37.5	0.24 x 0.25

Installation instructions

A number of preventive measures are required to guarantee a long service life:

- Filtering the incoming water. This can be done with special filter vents designed by Hydrorock.
- Because the stone wool blocks are consistently constructed in the same way, the blocks can be adapted to the conditions in the field, even afterwards, without losing the functionality of the system. The blocks can easily be cut; for example, if pipes and cables have to be taken into account.

Preparation work surface

- Although not strictly necessary, proper preparation of the work surface will contribute to the quick and accurate placement of the rockwool blocks.

Stacking

- The blocks are placed vertically, as can be seen in the photos below.



Connections

- The pipe in the blocks for the water supply or serving as an air outlet has a diameter of 100 mm. Standard connections can be used.
- Optionally, flexible pipes can be used to be flexible during installation.

Storage

- The pallets can be stacked up to a maximum of 2 high.
- The pallets are resistant to all weather conditions and can be stored on the construction project in unopened packaging under all common conditions, also for longer periods.
- Non-flammable - does not cause a fire hazard on the construction site.

Instructions for use

- The most recent manual with installation instructions and the warranty conditions can be downloaded at: www.hydrorock.com

References

Physical properties : Hydrorock International B.V. 2019

Water features : Deltares report # 11200122-000

Load strength : Deltares report # 11200122-000

Installation instructions: Hydrorock International B.V.

Contact details

Address : Hydrorock International B.V.
's-Gravelandsweg 246
3125 BK Schiedam
The Netherlands

Contact : Richard Dirne

Telephone : +31 10 30 20 000

E-mail : info@hydrorock.com

Website : www.hydrorock.com

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