



BYWAY
GREEN
ROOF

AQUADESK

Retention and vegetation board



1021 - CPR - 040 / 2018



- Characteristics:** Thermobonded board for designing of green roof compositions
- Material content:** Recycled polyester
- Certification:** The product is certified according to Standard EN 13252:2016
- Follow-up documentation:** DoP: AQUADESK 2000 - TL20 - 2018-1 and AQUADESK 3000 - TL30 - 2018-1
- Patent:** 308135 Czech Republic
- Utility model:** 17336 Austria, 21 2019 000 300 Germany

Properties:



Function:



Regular use: Retention, drainage and vegetation layers on green roofs.



Material specification sheet

Date of Issue: 1. 6. 2023

Quality Management System ISO 9001, ISO 14001, ISO and ISO 50001



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Technical parameters

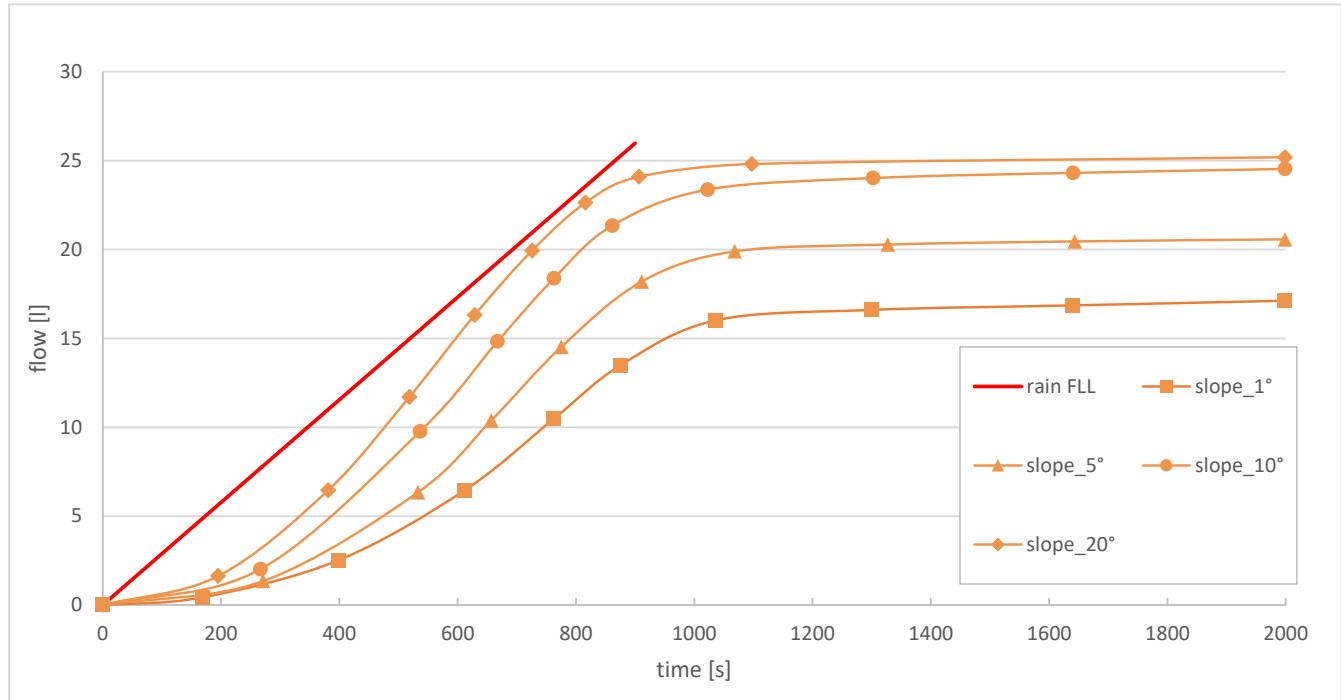
	AQUADESK	2000 TL 20	3000 TL 30	4000 TL 40	tolerance
PHYSICAL PROPERTIES					
Mass per unit area / EN ISO 9864	g/m ²	2000	3000	4000	± 15 %
Mass of fully saturated board	kg/m ²	13	22	32	± 15 %
Thickness 0,5 kPa / EN ISO 9073-2	mm	20	30	40	± 15 %
MECHANICAL PROPERTIES					
Compressibility / ČSN EN12431	%	20	20	20	
Tensile strenght / EN ISO 10319	↑ → kN/m	0,7	1,3		-0,2
		0,6	0,7		-0,2
Elongation [±20 %] / EN ISO 10319	↑ → %	11	14		
		7	11		
Resistance to static puncture - CBR test / EN ISO 12236	kN	0,11 -0,04	0,18 -0,04		
Dynamic stiffness / ČSN ISO 9052-1	MPa/m	11,5	8,2	7,3	
Dynamic perforation resistance / EN ISO 13433	mm	47	37		+3
HYDRAULIC PROPERTIES					
Maximum water capacity - slope 0°	l/m ²	12	20	29	
Off-flow characteristics	Attachment No. 1				
Characteristic opening size 0 ₉₀ / EN ISO 12956	µm	145	132		±15 %
Water permeability (Vh50) / EN ISO 11058	l/m ² .s	4,42.10 ⁻²	3,71.10 ⁻²		±20%
	0,15 kPa = 15 kg/m ²	3,27.10 ⁻²	2,86.10 ⁻²	4,16.10 ⁻²	
	0,50 kPa = 51 kg/m ²	3,06.10 ⁻²	3,14.10 ⁻²	4,51.10 ⁻²	
	1 kPa = 102 kg/m ²	2,82.10 ⁻²	3,07.10 ⁻²	4,45.10 ⁻²	
	20 kPa = 2,04 t/m ²	6,35.10 ⁻³	1,01.10 ⁻²	1,88.10 ⁻²	
	100 kPa = 10,2 t/m ²	7,6.10 ⁻⁴	1,41.10 ⁻³	2,14.10 ⁻³	
Water permeability in the plane (longitudinal direction) / hydraulic slope 0,1 = 5° / EN ISO 12958	200 kPa = 20,4 t/m ²	3,84.10 ⁻⁴	5,34.10 ⁻⁴	1,12.10 ⁻³	
	0,15 kPa = 15 kg/m ²	2,86.10 ⁻¹	2,57.10 ⁻¹	3,78.10 ⁻¹	
	0,50 kPa = 51 kg/m ²	2,77.10 ⁻¹	2,99.10 ⁻¹	4,31.10 ⁻¹	
	1 kPa = 102 kg/m ²	2,64.10 ⁻¹	2,86.10 ⁻¹	4,30.10 ⁻¹	
	20 kPa = 2,04 t/m ²	6,1.10 ⁻²	9,83.10 ⁻²	1,88.10 ⁻¹	
	100 kPa = 10,2 t/m ²	7,33.10 ⁻³	1,35.10 ⁻²	2,12.10 ⁻²	
200 kPa = 20,4 t/m ²	3,33.10 ⁻³	5,12.10 ⁻³	9,96.10 ⁻³		
INSULATION PROPERTIES					
Thermal conductivity-laboratory humidity / EN 12667	W/m*K	0,038	0,038	0,038	
Thermal conductivity-saturated state / EN 12664	W/m*K	0,142	0,142	0,142	
Sound absorption / ČSN ISO 10534-1	Attachment No. 2				
FIRE CLASSIFICATION					
Composition of an extensive green roof ČSN P CEN/TS 1187	Broof T3				
CHEMICAL PROPERTIES					
pH reaction		Neutral	Neutral	Neutral	
Properties	Without hazardous chemicals and solvents				
DIMENSIONS					
Delivered format		board	board	board	
Width	cm	60	60	60	± 2 cm
Lenght	cm	120	120	120	± 2 cm
PACKAGING, STORAGE and DISPOSAL					
Pallet dimension	cm	120x120	120x120	120x120	
Number of boards per pallet	ks	200	134	100	
	m ²	144	96,48	72	
Appr. weight of pallet	kg	300	300	300	
Storage	Under roof, in dry places				
Disposal	The product can be recycled				



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Off-flow characteristic for different roof slopes - AQUADESK 2000 TL20



Notes:

Off-flow characteristic of board- tested on area of 1,35 m²

Measured without geotextile, loaded with 100 mm sharp gravel.

Rain simulated in accordance with FLL norm 27mm water column- 15min.

BOARD RETENTION - the difference between FLL rain precipitation and off-flow at a given time.

Data obtained by test and calculation at Brno University of Technology, Ing. Petr Selnik, 2017/2018.

Tested under laboratory condition

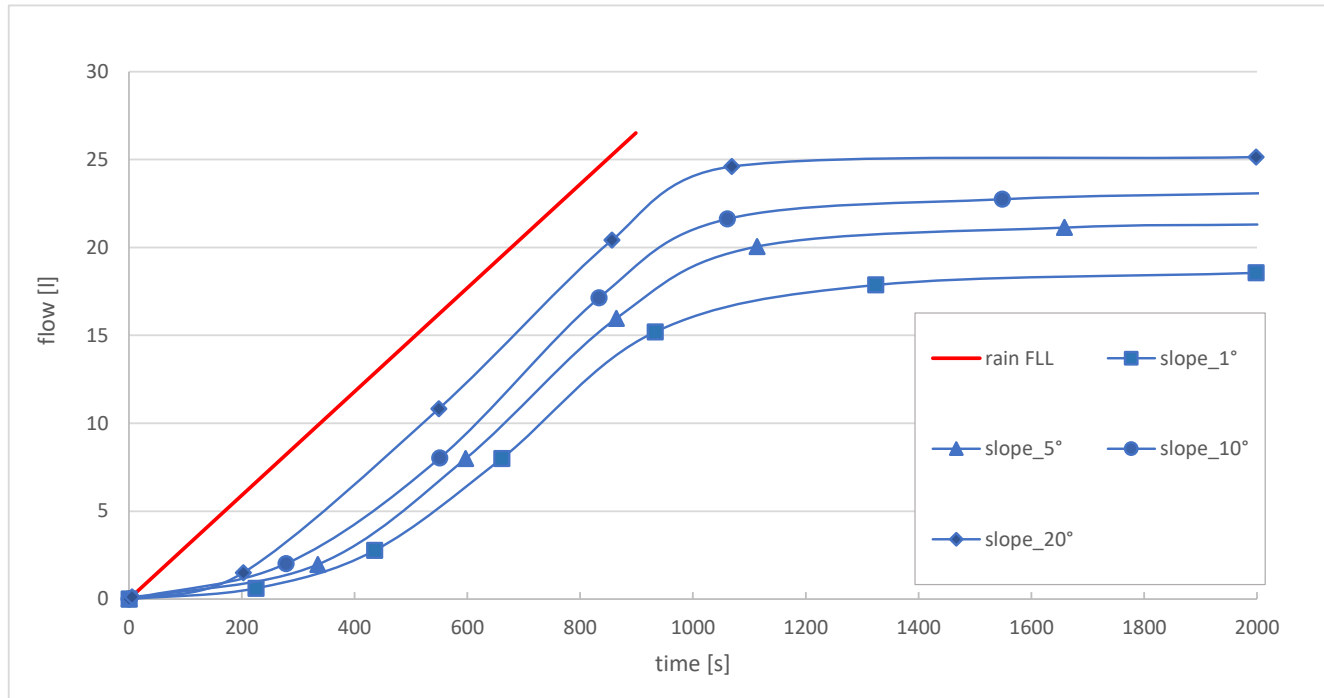


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Off-flow characteristic for different roof slopes - AQUADESK 3000 TL30



Notes:

Off-flow characteristic of board- tested on area of 1,35 m²

Measured without geotextile, loaded with 100 mm sharp gravel.

Rain simulated in accordance with FLL norm 27mm water column- 15min.

BOARD RETENTION - the difference between FLL rain precipitation and off-flow at a given time.

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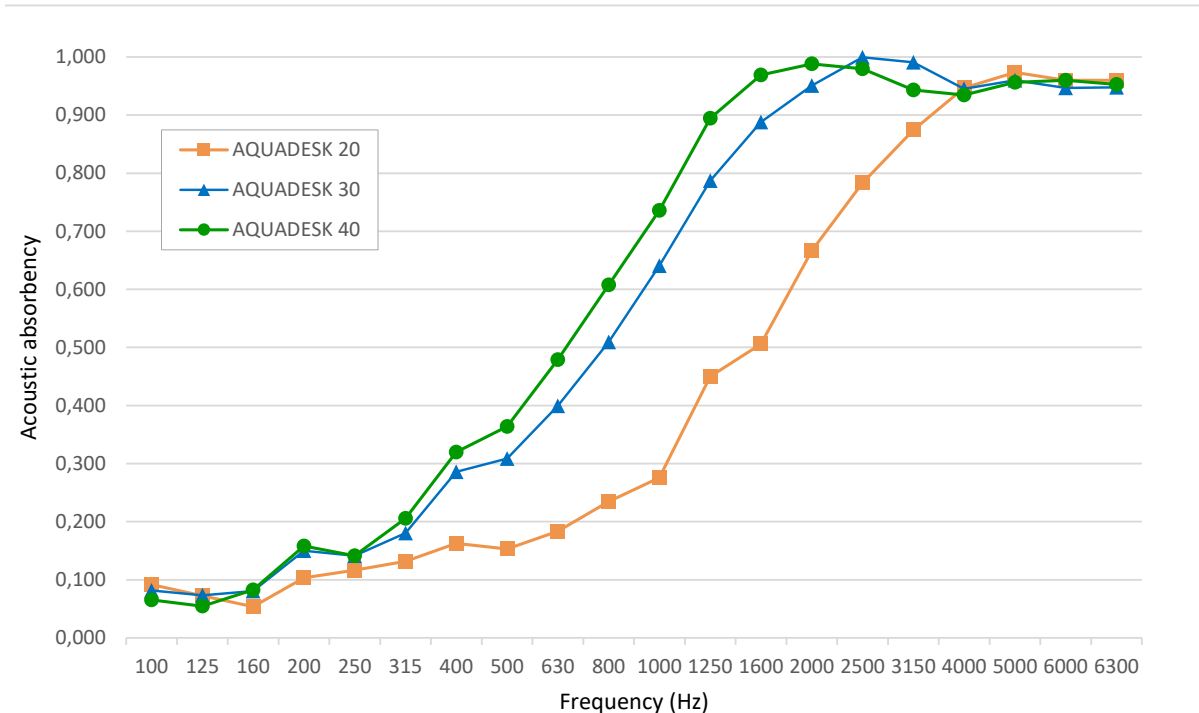


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ACOUSTIC ABSORBENCY



	AQUADESK 20	AQUADESK 30	AQUADESK 40
100	0,092	0,082	0,065
125	0,072	0,073	0,054
160	0,054	0,080	0,083
200	0,103	0,150	0,158
250	0,117	0,141	0,141
315	0,132	0,180	0,206
400	0,163	0,286	0,320
500	0,153	0,309	0,364
630	0,183	0,400	0,479
800	0,235	0,509	0,608
1000	0,276	0,640	0,736
1250	0,450	0,787	0,895
1600	0,506	0,888	0,969
2000	0,667	0,951	0,988
2500	0,783	1,000	0,980
3150	0,874	0,991	0,943
4000	0,947	0,945	0,935
5000	0,973	0,960	0,956
6000	0,960	0,947	0,960
6300	0,960	0,948	0,953

Data measured at VUT Brno, doc.Ing. Jiří Zach, Ph.D, 2018

Tested under laboratory condition