EASY WAY TO GREEN ROOF

AQUADESK

Retention and vegetation board

CE

1021 - CPR - 040 / 2018

OEKO TEX® STANDARD 100 PG035 217573 OETI

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:

WATER RETENTION

DRAINAGE

PROTECTION

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

Material specification sheet

Date of Issue: 4. 9. 2023

Quality Management System ISO 9001, ISO 14001, ISO 45001 a 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 absorption l/m2		l/m^2	17,6	28,8		
Off-flow characteristics		Attachment No. 1				
Characteristic opening size O_{90} / EN ISO 12956		µm	145	132		±15 %
Water permeability (VIh50) / EN ISO 11058		$l/m^2.s$	$4{,}42.10^{-2}$	$3{,}71.10^{-2}$		±20%
Water permeability in the plane (longitudinal direction) / hydraulic slope 0,1 = 5° / EN ISO 12958	0,15 kPa = 15 kg/m^2		$3{,}27{\cdot}10^{-2}$	$2{,}86{\cdot}10^{-2}$	$4{,}16{\cdot}10^{-2}$	
	0,50 kPa = 51 kg/m^2		$3{,}06{\cdot}10^{-2}$	$3{,}14{\cdot}10^{-2}$	$4{,}51{\cdot}10^{-2}$	
	1 kPa = 102 kg/m^2		$2{,}82{\cdot}10^{-2}$	$3{,}07{\cdot}10^{-2}$	$4{,}45{\cdot}10^{-2}$	
	20 kPa = 2,04 t/m^2		$6{,}35{\cdot}10^{-3}$	$1{,}01{\cdot}10^{-2}$	$1{,}88{\cdot}10^{-2}$	
	100 kPa = 10,2 t/m^2		$7{,}6{\cdot}10^{-4}$	$1{,}41{\cdot}10^{-3}$	$2{,}14{\cdot}10^{-3}$	
	200 kPa = 20,4 t/m^2		$3{,}84{\cdot}10^{-4}$	$5{,}34{\cdot}10^{-4}$	$1{,}12{\cdot}10^{-3}$	
Water permeability in the plane (longitudinal direction) / hydraulic slope 1 = 45° / EN ISO 12958	0,15 kPa = 15 kg/m^2		$2{,}86{\cdot}10^{-1}$	$2{,}57{\cdot}10^{-1}$	$3{,}78{\cdot}10^{-1}$	
	0,50 kPa = 51 kg/m^2		$2{,}77{\cdot}10^{-1}$	$2{,}99{\cdot}10^{-1}$	$4{,}31{\cdot}10^{-1}$	
	1 kPa = 102 kg/m^2		$2{,}64{\cdot}10^{-1}$	$2{,}86{\cdot}10^{-1}$	$4{,}30{\cdot}10^{-1}$	
	20 kPa = 2,04 t/m^2		$6{,}1{\cdot}10^{-2}$	$9{,}83{\cdot}10^{-2}$	$1{,}88{\cdot}10^{-1}$	
	100 kPa = 10,2 t/m^2		$7{,}33{\cdot}10^{-3}$	$1{,}35{\cdot}10^{-2}$	$2{,}1210^{-2}$	
	200 kPa = 20,4 t/m^2		$3{,}33{\cdot}10^{-3}$	$5{,}12{\cdot}10^{-3}$	$9{,}96{\cdot}10^{-3}$	
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				

The data was measured at the laboratories of RETEX a.s., Brno University of Technology and the Textile Institute Brno, and are for informative purpose only.

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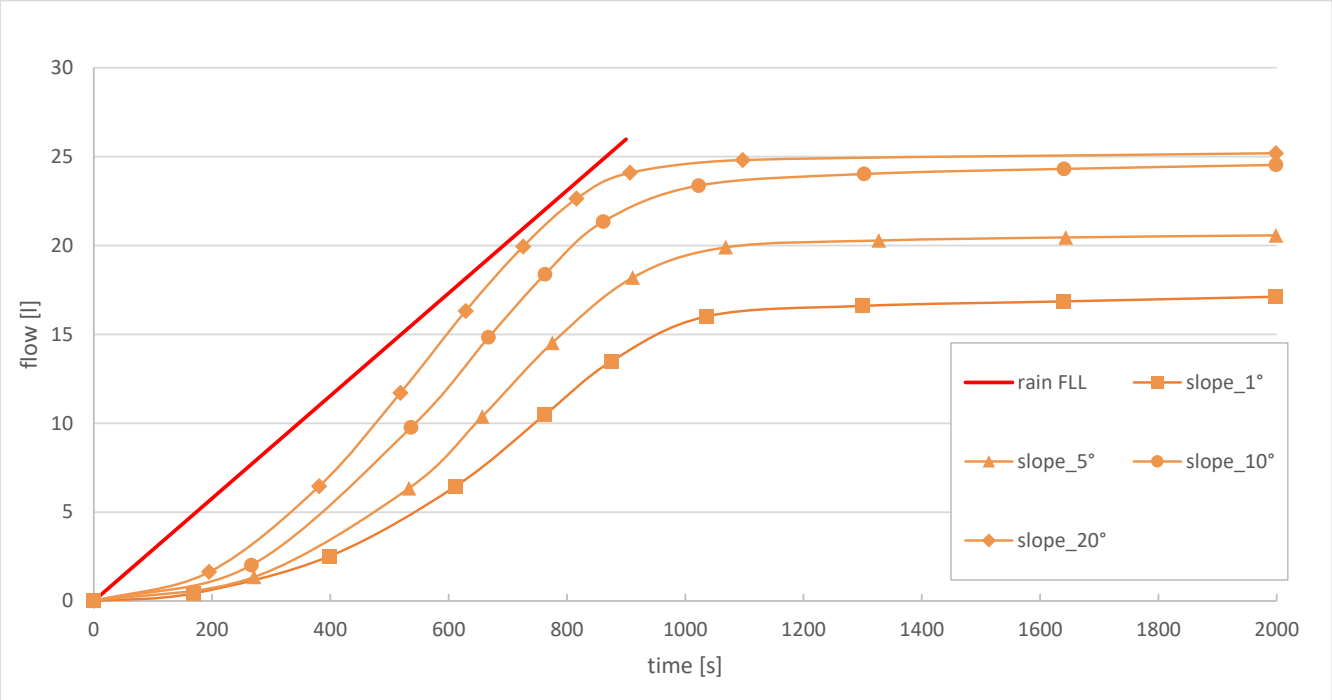
Off-flow characteristic for different roof slopes - AQUADESK 2000 TL20



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.

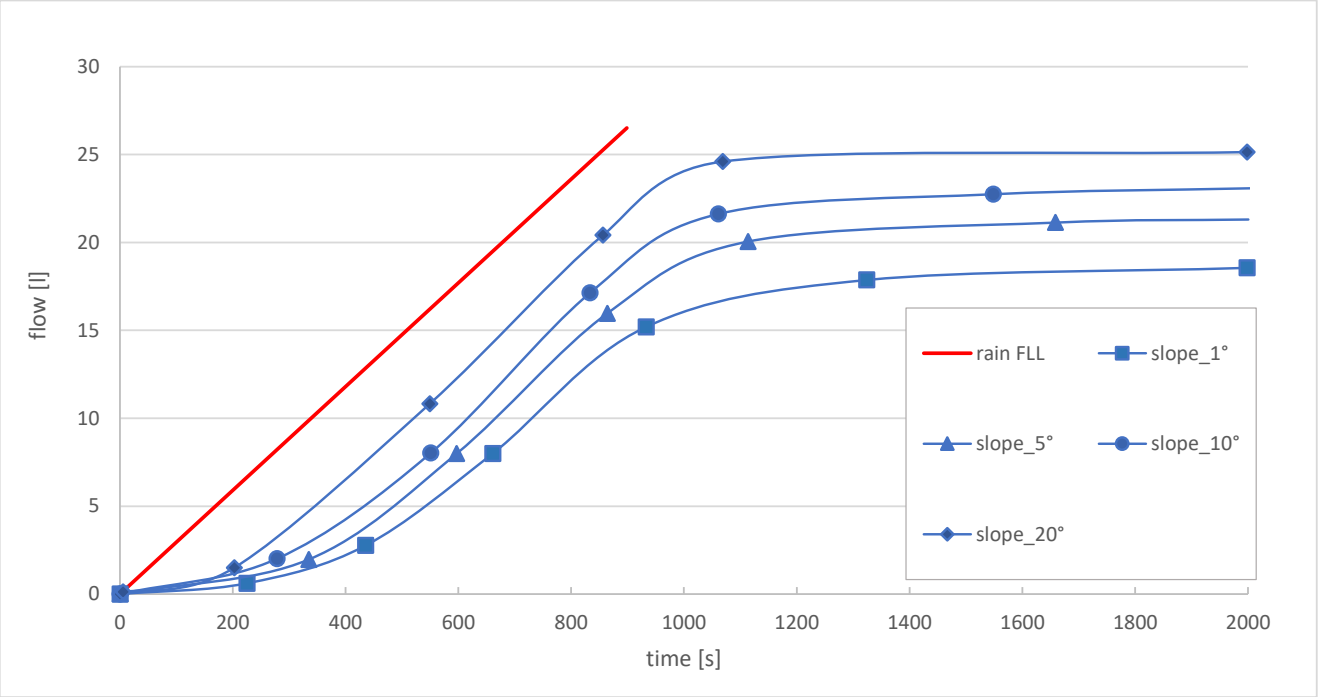
BOARD RETENTION *- the difference between FLL rain precipitation and off-flow at a given time.*

Data obtained by test and calculation at Brno University of Technology, Ing. Petr Selník, 2017/2018.
Tested under laboratory condition

AQUADESK

Retention and vegetation board

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.*

Data obtained by test and calculation at Brno University of Technology, Ing. Petr Selník, 2017/2018.
Tested under laboratory condition

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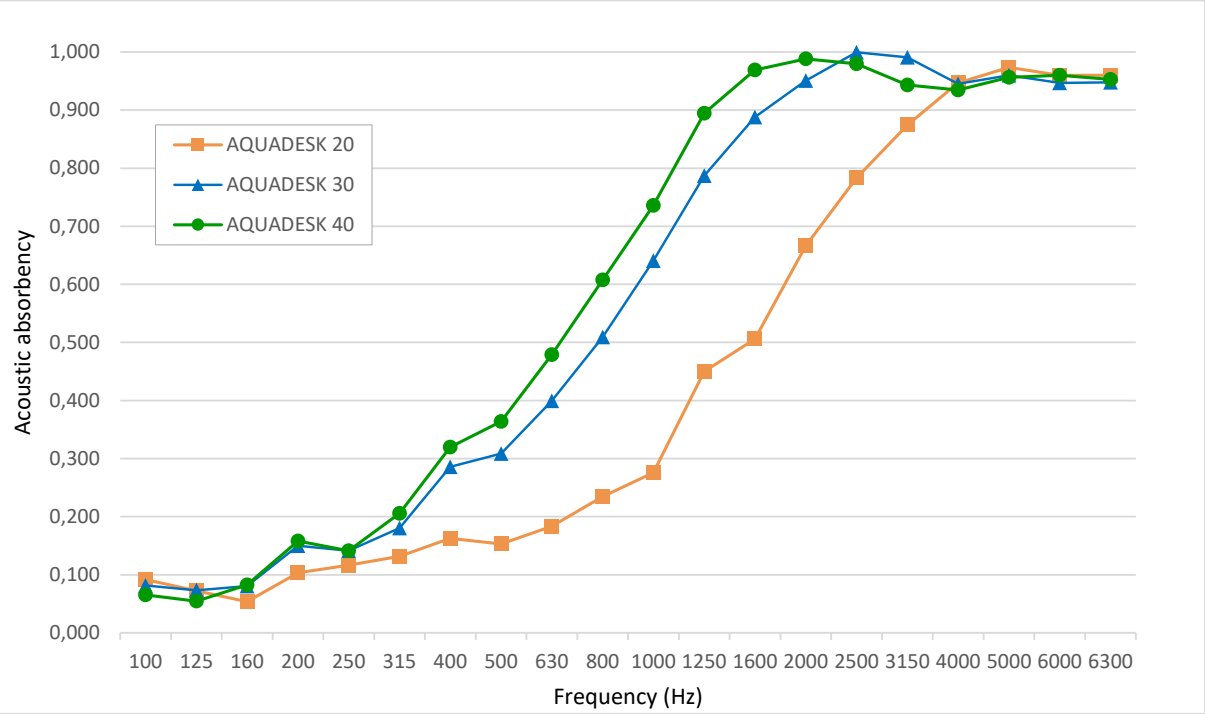
ACOUSTIC ABSORBENCY



	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