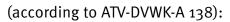
Sizing form for infiltration systems





Otto Graf GmbH		Project address:				Owner:				
Kunststofferzeugnisse	rioject address.									
Product management						Name:				
Carl-Zeiss-Strasse 2 – 6					Street:					
DE 79331 Teningen, Germany		F			Postcode, city/town:					
		C			Country:					
Phone.: +49 7641 589-0					Phone.:					
Fax: +49 7641 589-50						Fax:				
						Email:				
	1									
Infiltration type	on module	n module								
Property type	☐ Private	□ Industrial/commercial □			□ Municipal □					
Preferred GRAF products	☐ Infiltration Tunel		□ Ir	nfiltration Tunel Twin	☐ Herkules in		nfiltration tank			
Treferred older products	☐ EcoBloc Inspect flex		□E	coBloc maxx	☐ EcoBloc lig		ht 🗆 Rain-Bloc			
Installation situation										
Distance from groundwater in	m (ground le	evel to max. gro	oundw	rater level)						
Loading capacity □ Pedestrian □ Vehicle-loading □ 12 t / H-10, H-15 □			3 (30t		/HS-20 □ 60t/H-25				
Area available for infiltration (length x width)							m x	m		
Recommended mean runoff coefficient Ψ m according to ATV-DVWK-A 117 and ATV-D						WK-M 153 (German	stan	ıdards)	
Surface type / roof Type of runoff				R	Runoff coeffi	cient Ψ	m	m² Area		
Pitched roof		Metal, glass, slate, fibre cement,			С	0.9-1.0				
		brick, roofing felt			С	0.8-1.0				
Flat roof (incline up to 3° or approx. 5 %)		Metal, glass, fibre cement			C	0.9-1.0				
		Roofing felt, roofing film			c).9				-
		Gravel			+	0.7				
Green roof		Topsoil layer∢10 cm			c	0.5				
(incline up to 15° or approx. 25 %)		Topsoil layer > 10 cm			+	0.3				
		Asphalt, jointless concrete			+	0.9				
	_	Paving with sealed joints				0.75				
Roads, paths and public areas (flat)		Solid gravel				0.6				
		Paving with open joints				0.5				
		Loose gravel, gravel lawn				0.3				
		Composite stone with joints, permeable stone				0.25				
		Grass pavers				0.15				
		Clay soil				0.5				
Embankments, verges and trenches		Loamy sandy soil			+	0.4				
with rain run-off to drainage sy	stem —	Gravel and sandy soil			+	0.3				
Gardens, meadows and cultiva		Flat terrain			+	0.0 – 0.1				
land with potential rain run-off to drainage system		teep terrain			$^{+}$	0.1-0.3				
Surface type / soil			nt kf (m/s)	Please tick:						
Gravel 1*10										
Medium sand 1*10 ⁻⁴		t								
Fine sand				t						
Silt		1*10-6								

No infiltration possible

1*10⁻⁷

Clay

Sizing form for infiltration systems

(according to ATV-DVWK-A 138):

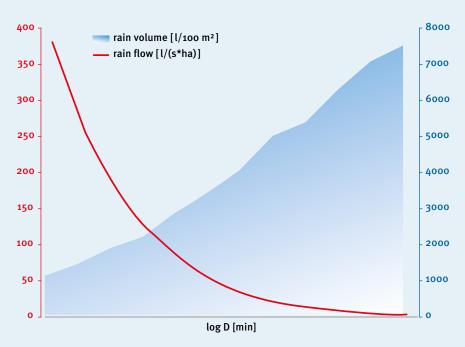


The local rainfalls are very important for the dimensioning of an infiltration or attenuation system. The system should be planned so that short-term heavy rainfall as well as long-term continuous rainfall events can be stored, attenuated or infiltrated. Due to local government laws and regulations the used period of time for a calculation may vary from 5 to 100 years. Most of the calculations are done with 5 year rain data, see picture/table below.

Values given as an example:

D [min]	rain flow [l/s*ha]	rain volume [l/100 m²]
5	380.7	1142.1
10	245.6	1473.6
20	158.9	1906.8
30	123.4	2221.2
60	80.3	2890.8
120	47.8	3441.6
240	28.4	4089.6
540	15.5	5022.0
720	12.5	5400.0
1440	7.3	6307.2
2880	4.1	7084.8
4320	2.9	7516.8

The table contains 5 year rain data of Berlin.



In combination with soil type, the critical value (max. value for infiltration system dimensions) could lie between 5 minutes (good soil) and 4320 minutes (clay or loam).

Input Data

D [min]	rain flow [l/s*ha]	inlet [l/s]	rainfall [mm/m²]

A reasonable dimensioning of an infiltration or detention system can only be done with a complete rainfall series.

If you e-mail this form to mail@graf.info or send it to us by fax, we will calculate the required infiltration or attenuation volume and draw up a free quotation.