



Infiltration tunnel

INFILTRATE RAIN OR WASTEWATER FROM
SMALL WASTEWATER TREATMENT SYSTEMS

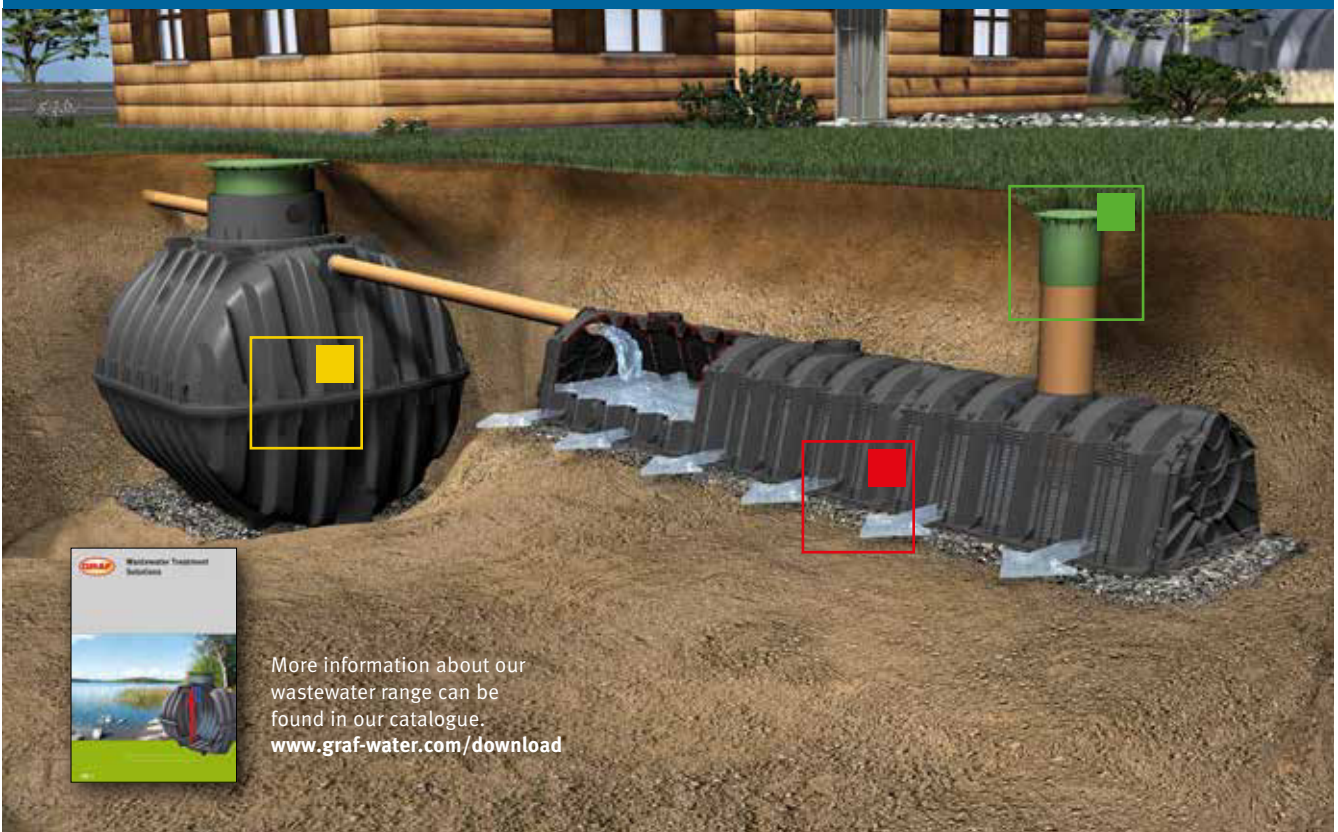


One system – multiple applications

Rainwater



Wastewater



Infiltration ditch body



NEW

Infiltration tunnel 130

Order no. 410200



Infiltration tunnel 300

Order no. 230010



Infiltration tunnel twin

Order no. 410130

Accessories

Deaeration end

DN 100, including connection pipe

Order no. 369017

DN 150/200 end cap

Order no. 369046

GRAF-Tex geotextile

For one Infiltration tunnel

Size: 2.50 x 2.50 m

Order no. 231006

Sold by the metre, roll width 5 m

Order no. 231002

Sold by the metre, roll width 2.5 m

Order no. 231007

Inspection end DN 200

Order no. 340527

Infiltration tunnel 130, end plate set

Order no. 410203

Infiltration tunnel/twin, end plate set

Order no. 231004

GRAF click-bolt connectors set

Order no. 410094

System accessories

Drainstar filter

Order no. 340143

Universal filter 3 external

Order no. 340020

Universal industrial filter 3 external

Order no. 340050

Biomatic distributor shaft

Order no. 450105

Pulse feeding shaft

Order no. 107021

Carat S 2,700 – 6,500 l

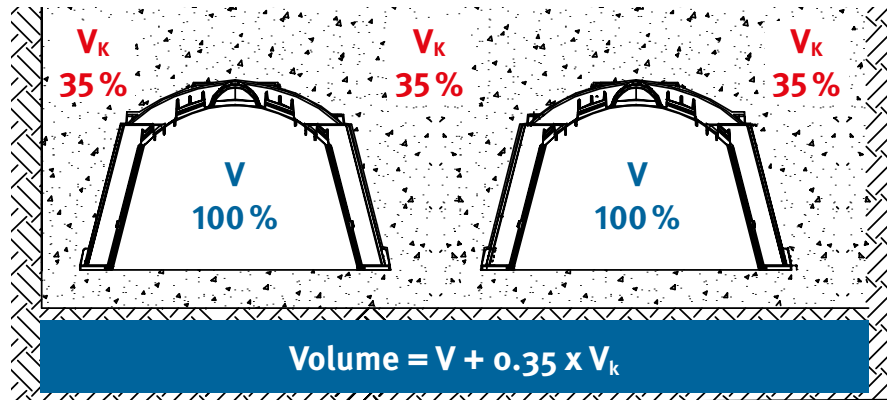
Order no. On request

Planning information

Storage capacity & retention

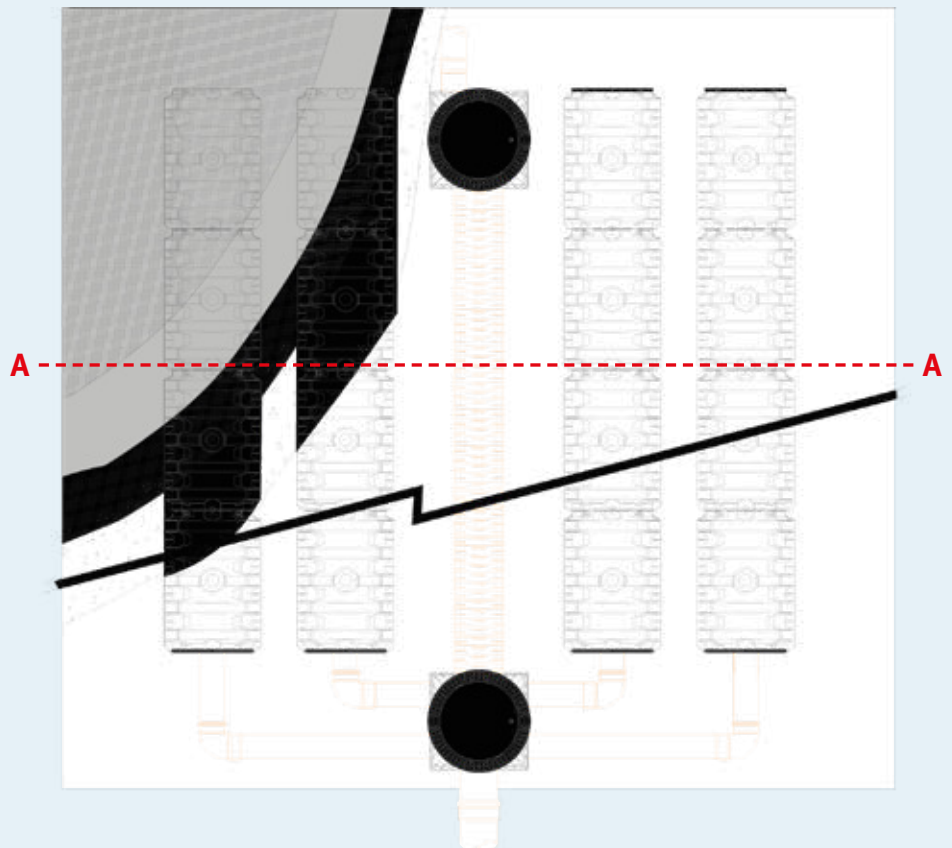
Storage capacity

The storage capacity of the tunnel and surrounding gravel packing can be determined during the calculation. Usually a packed bed of 8/16 mm gravel has a storage coefficient of approx. 35%. This means that one cubic metre of gravel can hold an additional 350 litres of water.

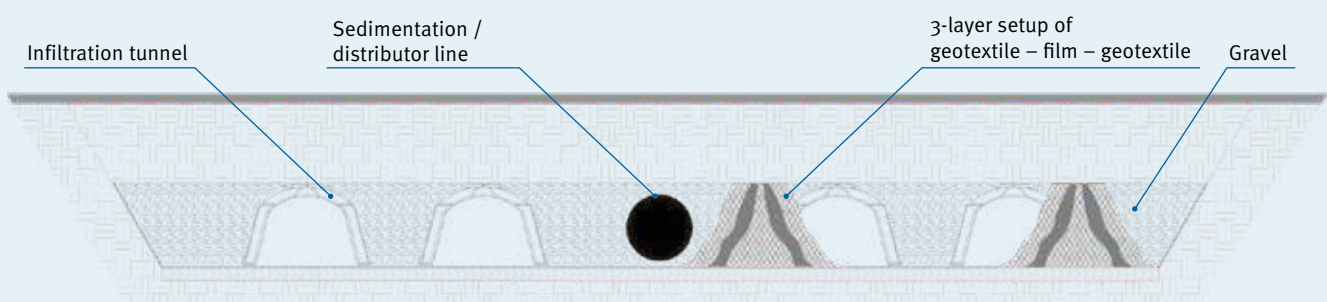


Retention

The GRAF infiltration tunnel can also be used with retention systems. When used in this way, the gravel packing, including infiltration tunnel, is usually welded in using a 3-layer setup of geotextile – film – geotextile. A separately installed shaft (e.g. GRAF Vario) with a restrictor is used to limit the discharge.



Cross-section A–A



Infiltration tunnel 130

Ideal for domestic applications

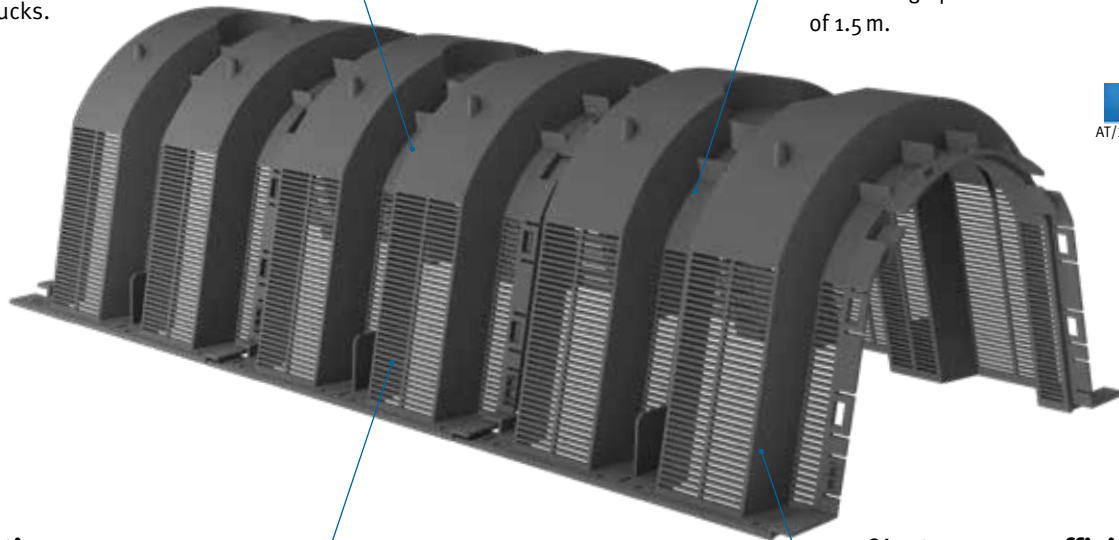
NEW

Logistics

The dimensions of the GRAF infiltration tunnel 130 and the fact that it can be stacked mean that optimum use can be made of the space available in containers and trucks.

Suitable for pedestrian / car loading

The infiltration tunnel 130 can be fitted under surfaces suitable for pedestrian or car loading up to a total installation depth of 1.5 m.



Applications

The infiltration tunnel 130 is perfectly suited to the percolation of cleaned wastewater downstream of small wastewater treatment systems or septic tanks. Other typical applications are line drainage in tight spaces, flat installation thanks to the low component height or rain infiltration of small linked surfaces such as summer houses, tool sheds, etc.

100 % storage coefficient

The open internal structure without any columns means that 100% of the tunnel's volume is available for storage. During line drainage in particular, the narrow design allows the storage volume to be increased.



12,000 l infiltration volume on one pallet



Logistics data	Infiltration tunnel 130	
Container	1470 items	191 m ³
Articulated lorry	1680 items	218 m ³
Mega trailer/jumbo truck	1960 items	255 m ³

Infiltration tunnel 300 / twin

Design with optimised logistics and maximum storage volume

Suitable for lorry loading

In order to enable the free arrangement of surfaces above it, the infiltration tunnel features long-term resistance with 59 kN/m² (infiltration tunnel twin 35 kN/m²) and is therefore lorry-bearing.

300 l volume

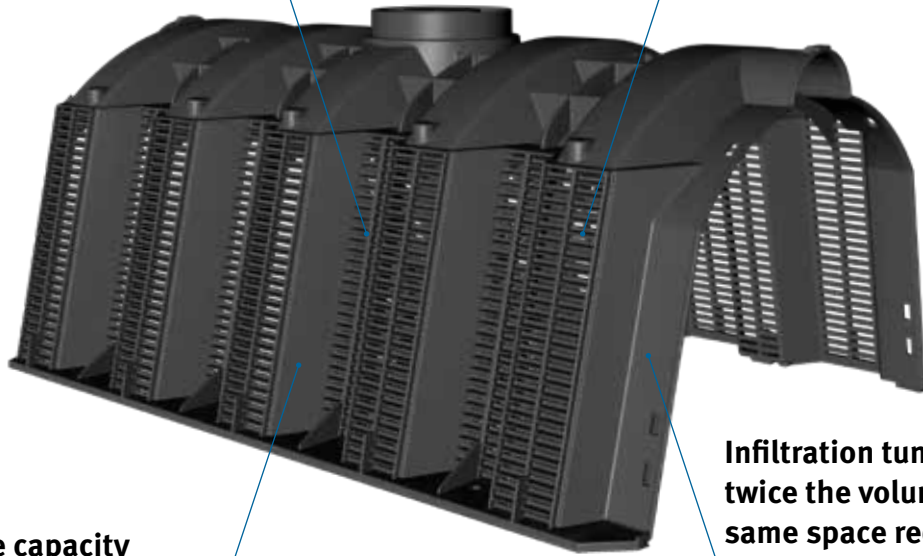
The compact dimensions combined with a storage coefficient of 100 % result in a useful volume of 300 l.

100 % storage capacity

The typical shape of the infiltration tunnel enables complete utilisation of the available volume for the temporary storage of rainwater.

Infiltration tunnel twin – twice the volume with the same space requirement

Upon request, the infiltration tunnel twin can offer a volume of 600 litres as two identical infiltration tunnel modules can be connected.



Football stadium, FR



Industrial building, PL

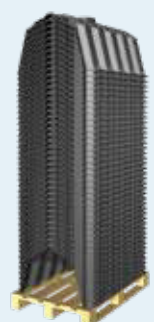


Military facility, PL

Infiltration tunnel 300		Infiltration tunnel twin	
975 items	293 m ³	480 items	293 m ³
1320 items	369 m ³	660 items	369 m ³
1480 items	444 m ³	740 items	444 m ³

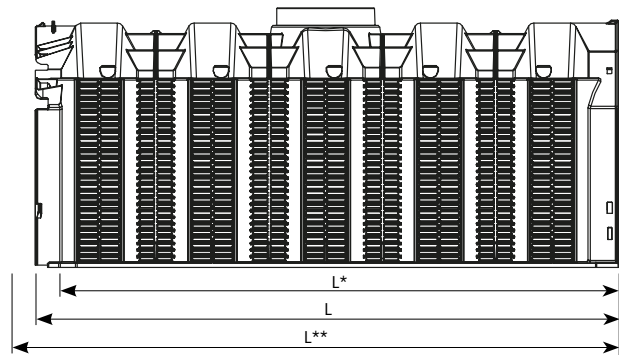
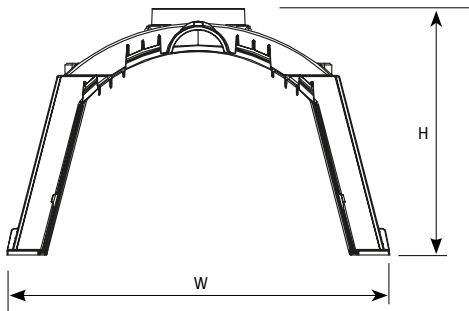


Thanks to its special construction, the GRAF infiltration tunnel can be easily stacked. Transporting up to 40 infiltration tunnels on one pallet cuts logistics costs and saves storage space.



Planning information

Dimensions & connections



Infiltration modules	Infiltration tunnel 130	Infiltration tunnel 300	Infiltration tunnel twin
L x W x H	1190 x 490 x 320 mm	1160 x 800 x 510 mm	1160 x 800 x 1020 mm
L* (connection of two tunnels)	1165 mm	1120 mm	1120 mm
L** (including end plate)	1240 mm	1200 mm	1200 mm
Weight	5 kg	11 kg	22 kg

Connection options at face end

DN 100	2 X	2 X	4 X
DN 150 / 200 / 300		1 X	2 X

Connection options at top

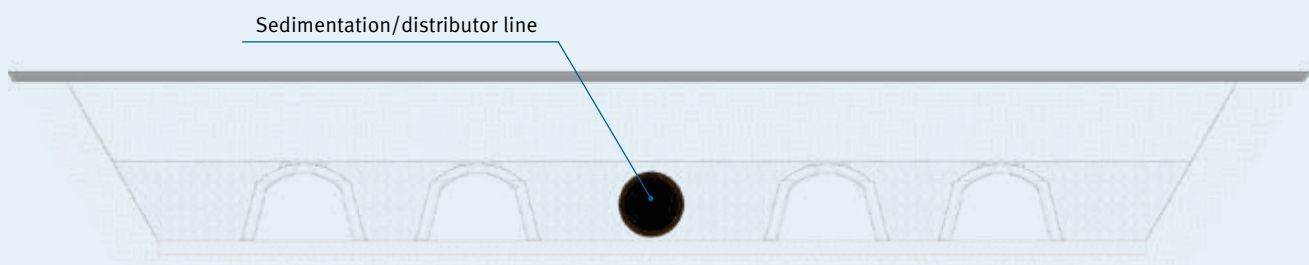
DN 100	3 X	1 X	1 X
DN 200		1 X	1 X

Inspection & cleaning suitability

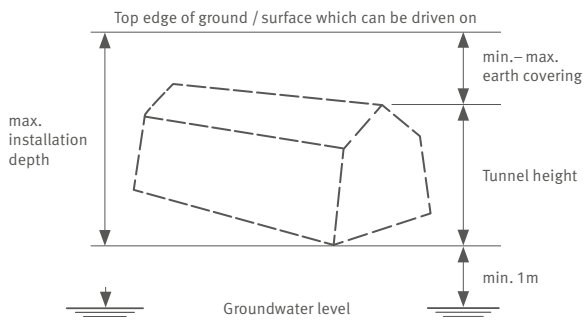
A retention or infiltration system with a GRAF infiltration tunnel can be inspected and cleaned using a series of sedimentation/distributor vessels. This involves placing a partially slitted drainage pipe in the centre or at parallel positions at regular intervals in relation to the GRAF infiltration tunnels.

The drainage pipe is connected to the inlet via a Vario shaft and this shaft also provides access for inspection or cleaning. The rain can spread evenly throughout the system via the partially slitted pipe and gravel packing.

Fine matter and suspended particles may settle in the drainage pipe and if necessary the pipe can be cleaned. The length and number of drainage pipes depend on the incoming volume flow.



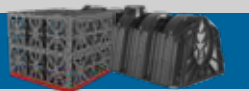
Infiltration modules		Infiltration tunnel 130	Infiltration tunnel 300	Infiltration tunnel twin
Volume gross/net		130 l / 130 l	300 l / 300 l	600 l / 600 l
Load capacity				
Load	Short term	max. 65 kN/m ²	max. 100 kN/m ²	max. 75 kN/m ²
	Long term	max. 30 kN/m ²	max. 59 kN/m ²	max. 35 kN/m ²
Without traffic load	min. / max. earth covering	150 – 1200 mm	250 – 3750 mm	250 – 1500 mm
	max. installation depth	1500 mm	4250 mm	2500 mm
Car	min. / max. earth covering	500 – 1200 mm	250 – 3500 mm	500 – 1500 mm
	max. installation depth	1500 mm	4000 mm	2500 mm
Truck 12	min. / max. earth covering		500 – 3250 mm	
	max. installation depth		3750 mm	
SLW 30	min. / max. earth covering		500 – 2750 mm	
	max. installation depth		3250 mm	
SLW 40	min. / max. earth covering		500 – 2500 mm	
	max. installation depth		3000 mm	
SLW 60	min. / max. earth covering		750 – 1750 mm	
	max. installation depth		2250 mm	



RAINWATER HARVESTING



STORMWATER MANAGEMENT



WASTEWATER TREATMENT SOLUTIONS



SEPARATORS



GARDEN PRODUCTS & MULTI-PURPOSE CONTAINERS



www.graf-water.com

Warranty clause:

The warranty mentioned in this brochure only refers to the tank in question and not to the accessories. Within the warranty period we grant free replacement of the material. Further benefits are excluded. Pre-condition for warranty benefits are proper handling, assembly and installation according to the mounting guidelines.

Over and above the statutory regulation, GRAF is lengthening the warranty period for a number of underground tanks. This relates to proper handling, assembly and installation in accordance with the installation manual, as well as leakproofness, usability and static safety. The prerequisites of this are competent assembly and operation in accordance with the requirements, namely the currently valid installation and operating instructions and the prevailing standards.

N.B. Protect tanks from frost when installed aboveground! In case of groundwater installation, please contact us for further information previous to the purchase!

For all indications of measurements in this brochure we reserve a tolerance of +/- 3%. The useful volume of the tanks may be up to 10% lower than the tank capacity, according to the connecting option.

Technical modifications and further development of the different products are subject to change. Errors excepted.

For all our offers and conclusions of contract are only valid our General Terms and Conditions of Business dated 01/10/2012 which we will send to you on request.

