Blofield Primary School
Plantation Road
Blofield, NR13 4PL

Planning Ref No. FUL/2022/0055

Planning Condition 23 and Reason

"No development above foundation level shall take place until a scheme has been submitted to and agreed by the Council, in consultation with Norfolk Fire and Rescue Service, for 1 fire hydrant capable of delivering a minimum of 20 litres per second of water. No building shall be occupied until the hydrant serving the property has been provided to the satisfaction of the Council in consultation with Norfolk Fire and Rescue Service".

Reason:
"To ensure adequate water infrastructure provision is made on site for the local fire service to tackle any property fire in accordance with the provisions of Policy 7 of the Joint Core Strategy for Broadland, Norwich and South Norfolk (2011), Policy GC4 of the Broadland Development Plan Document 2015 and Chapter 12 of the NPPF (2021)".

Proposed Fire-Fighting Water Storage Tank

A Graf Carat XXL 52,000 litre (46,800 litre usable) Fire-Fighting Water Storage Tank is proposed to provide an alternative source of water, in addition to the private fire hydrant also proposed, as the hydrant would be unable to deliver the 20 l/s water flow rate requested by Norfolk Fire and Rescue Service.

Building Regulations Approved Document B and BB100 permit the use of an alternative source of water supply, where the pressure and water flow in the water main are insufficient, and a charged static water tank with a minimum capacity of 45,000 litres would meet this requirement. Although the tank would replace the requirement for a fire hydrant, it will only provide a finite supply of water, and Norfolk Fire and Rescue Service have recommended retaining a hydrant to provide some additional resilience and ensure that their operational crews would have the best opportunity to minimize damage to the buildings if there were to be an ongoing fire situation.

Norfolk Fire and Rescue Service have indicated that they would have no objection to an underground tank, provided the access chamber is in a suitable location and opens directly into the main body of the tank. Evidential recording of the water level in the tank must be put in place, to ensure that maximum capacity is maintained at all times, and this shall be written into the Operation and Maintenance manuals as a requirement, in addition to the periodic inspection and maintenance of the tank. (See email from Norfolk Fire and Rescue Service dated 31/01/2024 contained within Appendix A).

A Graf Carat XXL 52,000 litre underground fire water storage tank shall be installed by an approved specialist sub-contractor, complete with access turrets and inspection ladders, air vents and suction pipework, with a fire hose connection kit in accordance with BS 336. Suitable access for a fire appliance is required with 8 metres of the hose connection, and Emergency Water Supply (EWS) signage shall be provided and approved by Norfolk Fire and Rescue Service.

The pit excavation shall have a well compacted gravel base >150mm thick, and backfill around and over the tank shall be with round-grained gravel; maximum grain size 8/16. Temporary trench side supports will be needed and shall be removed when no longer required. The tank shall be installed in accordance with the manufacturer's instructions and their recommended clearances around the tank shall be observed while the trench is open.

A case study of where a similar tank has been installed in a similar setting is available on the Graf website: Oak View Primary School: Oak View Primary School | GRAF

Graf Fire Water Tank Installation

Installation Complete

Further details of the tank and it's installation are contained within Appendix B.

Appendix A: Email from Norfolk Fire and Rescue Service

RE: NSD-0200814 / 10754465 / Blofield New Primary, Plantation Road, Blofield, NR13 4PL

Reply | Reply All | Forwar

Fire - Water Officer <FireWaterOfficer@norfolk.gov.uk>
To Buck, Steve; Jonathan Warren
Cc Thompson, Philip; Hallett, Ben; James Clarke; Amy Leathers; Paul Lancaster
You replied to this message on 31/01/2024 09:49.

Good morning Steve,

If you were to install the 45000ltr tank solution you would satisfy the building regulations requirement for supply of fire fighting water as per sections 16.12 and 16.13 of Approved Document B, which allows the tank s used where no piped supply is available or insufficient pressure or flow is available. In essence what this is saying is that the tanks replace the requirement for a hydrant.

For initial fire fighting and search/rescue the tank provision would be adequate to ensure we can operate effectively so we would not oppose it as long as it is in accordance with Building Regulation requirements.

However, I would always suggest confirming that this is acceptable to your developer's insurers as the tank solution provides a finite supply of water and they may prefer you to ensure there is a hydrant – albeit low f the vicinity to ensure our operational crews have the best opportunity to minimize damage to the buildings should there be an ongoing fire situation.

Kind Regards

Tim

Tim Harper-Allison (he/him)
Water Resources & Planning Manager
Direct 0300 1231261
tim.harper-allison@norfolk.gov.uk
Chat with me on Teams

Dept 0300 1231165
FireWaterOfficer@norfolk.gov.uk
Diamond Jubilee Fire Station - Carrow, 63 Bracondale, Norwich, NR1 2EE
Norfolk Fire & Rescue Service Norfolk County Council

Appendix B: Further details of Carat XXL Fire Fighting Water Tank

Carat XXL firefighting water tank

GRAF

Carat XXL firefighting water tank suitable for HGV loading up to 60 t*

- Complete system, including all accessories
- Dome shaft provides easy access into tank
- Individual tanks can be extended / connected to create large volumes
- Fill with mains water or rainwater
- Individual adaptation to ground level (earth covering/angle of slope)
- Lifting belts as unloading aids are fitted and supplied by the factory

Web code G1312

*With telescopic dome shaft HGV in conjunction with load distribution plate

ZIM 1. Platz

Illustration shows 46 000 l tank with telescopic dome shaft suitable for HGV loading. Please consider local requirements regarding useful water volume. Cover and compensating ring provided on site.

Scope of supply

1. Carat XXL firefighting water tank
2. Telescopic dome shaft HGV (Coverage to be provided on site)
3. Welded-in plastic suction pipe DN 125 (inner diameter: 125 mm) with flange, strainer made of stainless steel and anti-vortex plate, including suction pipe extension DN 125 (inner diameter: 125 mm) made of stainless steel with flange, firefighting water suction connection with fixed coupling version-A
4. Venting pipe DN 100 (inner diameter: 100 mm) made of stainless steel with hood and insect-proof screen for vertical installation
5. Aluminium access ladder including mounting kit for installation in tank dome
6. Holder with post made of stainless steel (without sign)

Holder with post and sign (Example: Germany)

Fully accessible

The GRAF Carat XXL firefighting water tank is completely accessible via an access ladder, so that any maintenance work can be carried out quickly and easily.

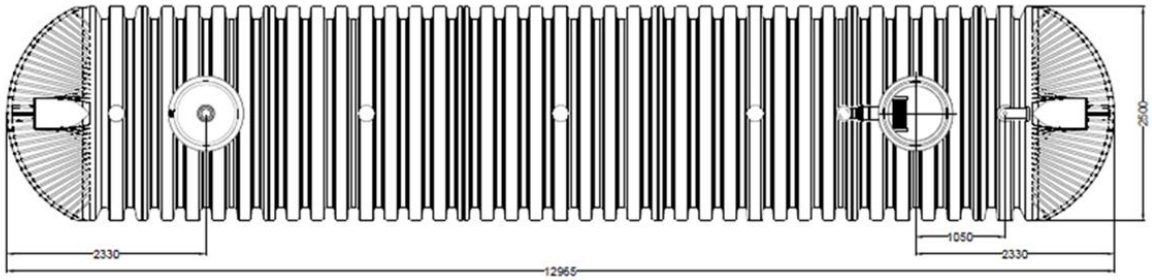
Technical data

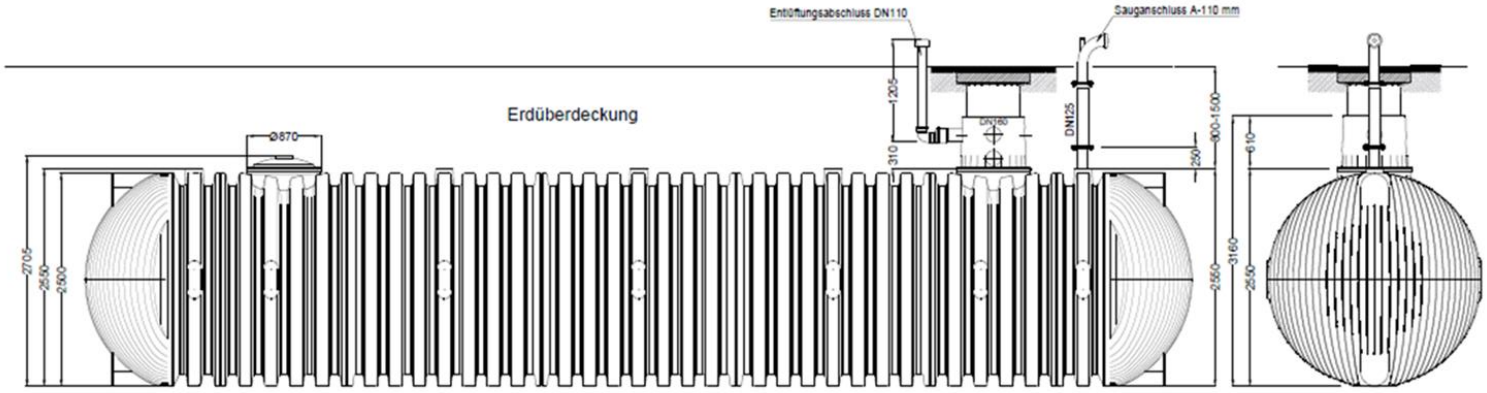
Max. earth covering:	1500 mm
Trafficability:	Max. axle load: 13.5 t Max. vehicle weight: 40 t
Trafficability in conjunction with load distribution plate:	Max. vehicle weight: 60 t
Installation window for trafficability:	800 – 1500 mm for cars 1000 – 1500 mm for HGVs
Groundwater stability:	up to the middle of the tank
Installation window for groundwater installation:	800 – 1500 mm
Connection:	5 x DN 150 (or 10 x DN 150*) (optionally up to DN 300), DN 200 connection on tank back

DN 250 connection fitting
To connect multiple Carat XXL firefighting water tanks (optionally up to DN 300)
Item no. 360023

Simple installation

No heavy equipment is required for transporting and moving plastic tanks. Usually a construction crane is sufficient, which in many cases is already on site. Deliveries are made using a common lorry.





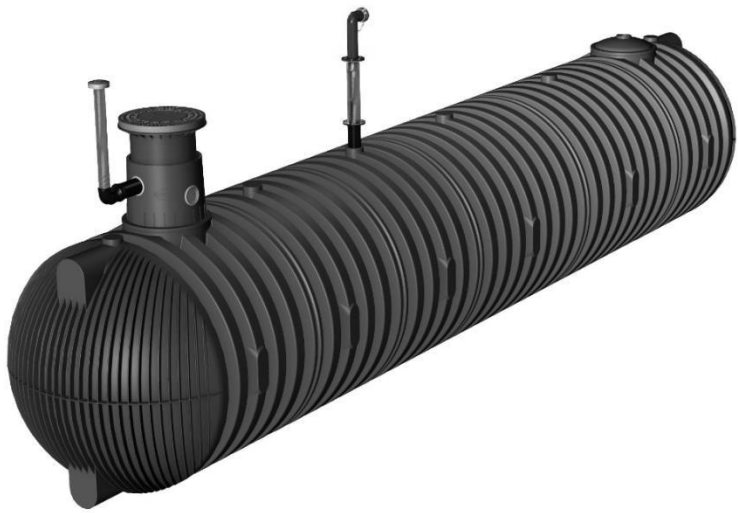
D	GRAF Carat XXL - Löschwasserspeicher Nennvolumen 52000 L / Nutzvolumen 46800 L			Artikel-Nr. product no. article no. artículo no.	380057 (380818 / 371018)
GB	GRAF Carat XXL extinguishing water tanks 52000 L / 46800 L	ES	GRAF Carat XXL depósito de agua para extinción de incendios 52000 L / 46800 L	FR	Carat XXL GRAF Réserve Incendie 52000 L / 46800 L	revision	
gezeichnet drawn	ISC	Gewicht weight	2250 kg	Otto Graf GmbH Carl-Zeiss-Str. 2-5 DE-79331 Teningen mail@graf.info www.graf.info			
Datum date	2019.03.20	Toleranz tolerance	+/- 3%				
Maßstab scale	M 1:50	Einheiten units	mm [inch] gal. = US gal.				

DIN A3

mail@graf.info
www.graf.info

Installation / assembly / and maintenance instructions for GRAF Carat XXL firefighting water tanks

Volume:	Order No.:
16000 L	380050 (380811+371018)
22000 L	380051 (380812+371018+371065)
26000 L	380052 (380813+371018+371065)
32000 L	380053 (380814+371018+371065)
36000 L	380054 (380815+371018)
42000 L	380055 (380816+371018+371065)
46000 L	380056 (380817+371018)
52000 L	380057 (380818+371018+371065)
56000 L	380058 (380819+371018)
62000 L	380059 (380820+371018+371065)
66000 L	380060 (380821+371018)
72000 L	380061 (380822+371018+371065)
76000 L	380062 (380823+371018)
82000 L	380063 (380824+371018+371065)
86000 L	380064 (380825+371018)
92000 L	380065 (380826+371018+371065)
96000 L	380066 (380827+371018)
102000 L	380067 (380828+371018+371065)
106000 L	380068 (380829+371018)
112000 L	380069 (380830+371018+371065)
116000 L	380070 (380831+371018)
122000 L	380071 (380832+371018+371065)



Please note that the useful volume may be up to 10 % below the total tank volume.

The points described in these instructions must be observed in all cases. Failure to do so shall invalidate the warranty. For any additional items purchased through GRAF, you will receive separate installation instructions in the transport packaging.

The tanks and the extinguishing water removal components must be checked for any damage before the system is transferred to the trench.

You can download any missing instructions from www.graf.info or request them from GRAF directly.

Contents

1. General information

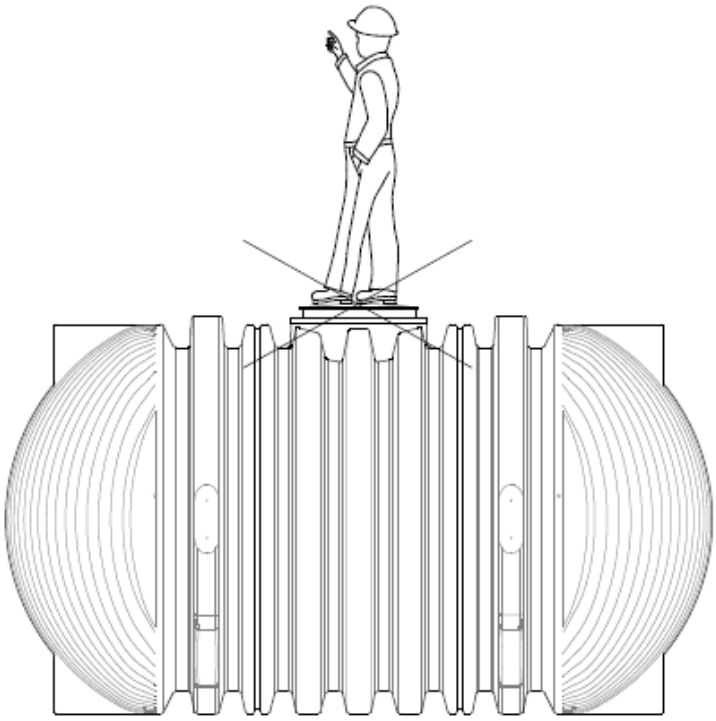
1.1 Safety

All work should be undertaken in compliance with the relevant accident prevention regulations according to BGV C22. A second person is required for safety reasons, particularly when inspecting tanks.

In addition, the applicable regulations and standards must be respected during installation, assembly, maintenance, repairs etc. Relevant information can be found in the corresponding sections of these instructions.

The entire system must always be switched off and secured against unauthorised resetting during any work on the system or system components.

The tank cover must always be kept closed, except during work inside the tank, otherwise the risk of accidents is high. The rain guard cover fitted upon delivery is only transport packaging, it is not suitable for pedestrian loading and is not childproof. After delivery, it must be immediately replaced with a suitable cover provided by the customer.



GRAF provides an extensive range of accessories, which are all coordinated and can be combined to form complete systems. The use of accessories that have not been approved by GRAF results in the exclusion of the warranty/guarantee.

1.2 Labelling requirement

The post with holder for sign "Extinguishing Water Extraction Point", for securing directly to the intake pipe, is included in the scope of delivery. The corresponding sign in accordance with DIN 4066-B2 with the relevant extinguishing water volume details is supplied unlabeled for individual printing by the customer. The sign must be attached to the holder permanently in a highly visible place.

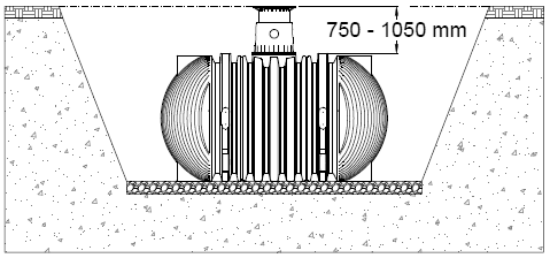
1.3 Acceptance

Every new firefighting water tank should be accepted by an officer from the relevant authority and is to be checked for its function. The fire protection specialist responsible verifies and calculates the amount of extinguishing water needed. Please note that the actual useful volume of extinguishing water may be up to 10 % below the stated total tank volume.

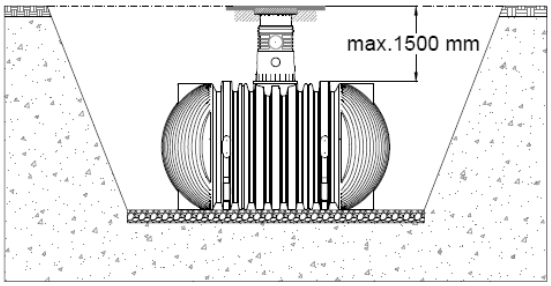
2. Installation conditions

Telescopic lorry dome shaft (cover in accordance with DIN 3223 - to be provided by the customer)

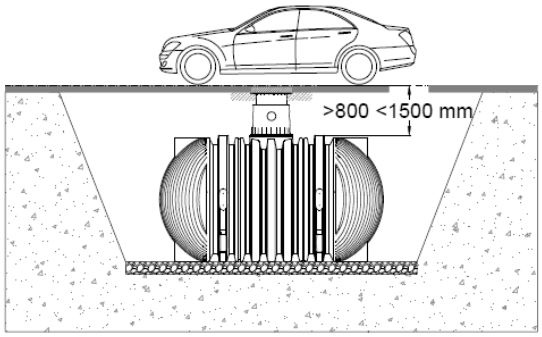
Covering heights with telescopic dome shaft in landscaped areas suitable for pedestrian loading 750-1050 mm.



Maximum covering height with extension sleeve and telescopic dome shaft.
Maximum covering height 1500 mm.

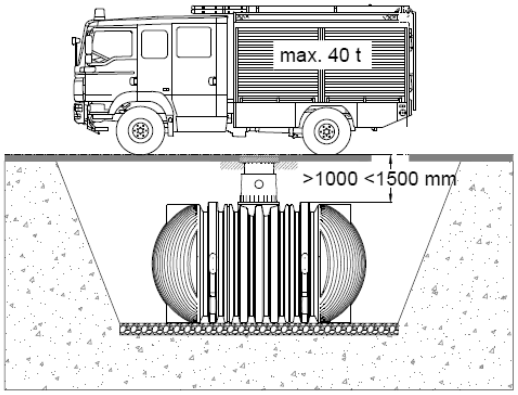


Covering heights with telescopic dome shaft cast iron in area driven over by vehicles >800<1500 mm.



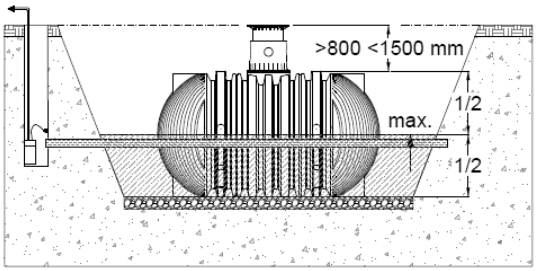
Covering heights with telescopic lorry dome shaft (cover in accordance with DIN 3223 – to be provided by the customer) in area driven over by lorries >1000<1500 mm.
(Load up to max. 40 t)

Max. load: 40t
Max. axel load: 13,5t

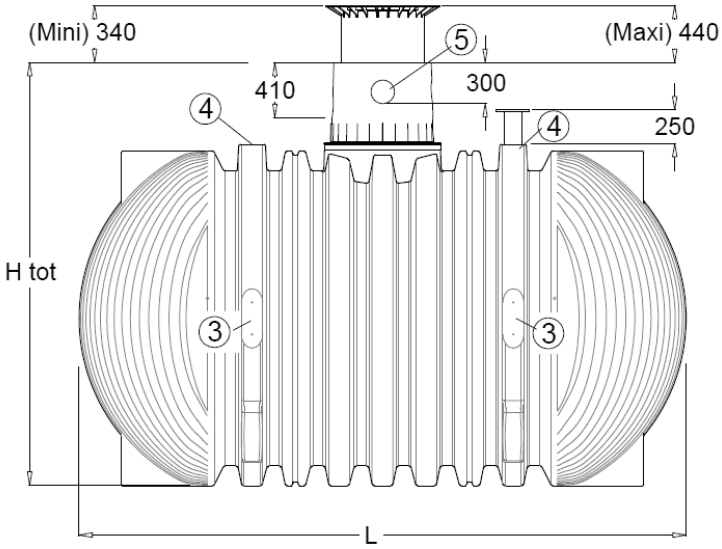


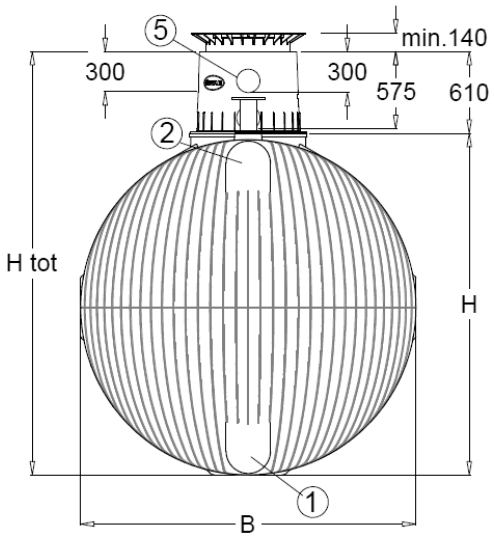
The tanks may only be installed in ground water with some limitations. If you can expect the ground water to be higher than shown in this figure, even if only occasionally, it should be discharged through drainage.

Covering heights with ground water >800<1500 mm.



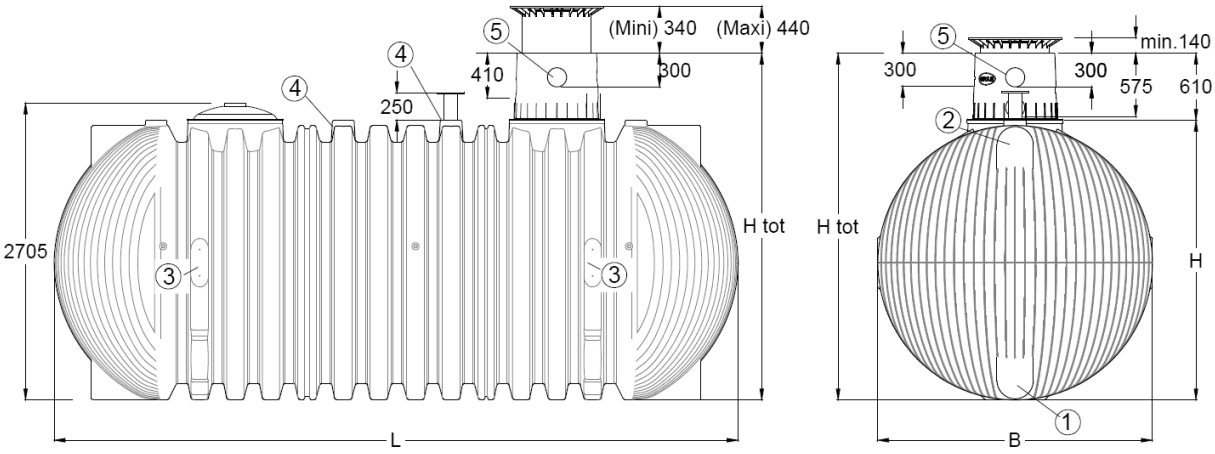
3. Technical data





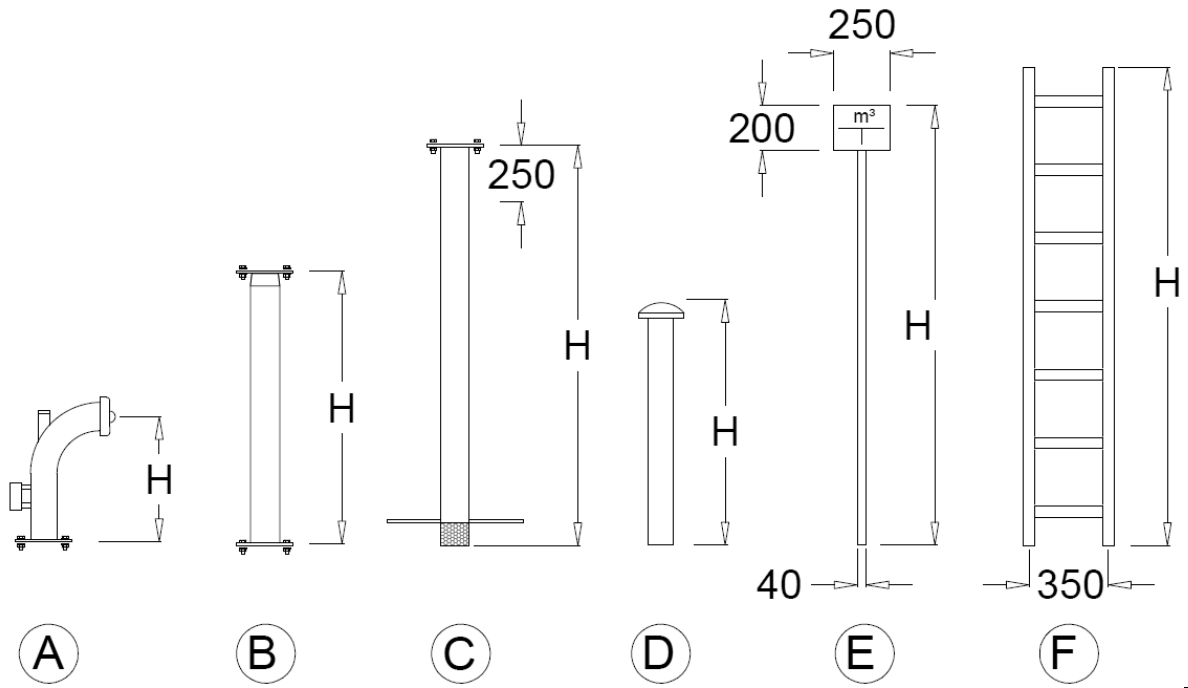
	Tank (litres)	16 000	22 000	26 000	32 000	36 000	42 000	46 000	52 000	56 000	62 000	66 000
Technical data	Item no.	380050	380051	380052	380053	380054	380055	380056	380057	380058	380059	380060
	Weight (kg)	750	1000	1100	1375	1470	1765	1860	2150	2250	2540	2635
	L (mm)	4590	6230	7200	8440	9410	10680	11650	12920	13890	15160	16130
	B (mm)	2500										
	H (mm)	2550										
	Total height (Htot) (mm)	3160										
Connection surfaces	① Tank bases (bottom) up to DN315	2										
	② Tank bases (top) up to DN315	2										
	③ Tank cylinder (sides) DN110	8	8	8	12	12	16	16	20	20	24	24
	④ Tank cylinder (top) DN200	2	4	4	5	5	6	6	7	7	8	8
	⑤ Tank dome DN160	5	10									

3. Technical data



	Tank (litres)	72 000	76 000	82 000	86 000	92 000	96 000	102 000	106 000	112 000	116 000	122 000
Technical data	Item no.	380061	380062	380063	380064	380065	380066	380067	380068	380069	380070	380071
	Weight (kg)	2930	3025	3315	3410	3705	3800	4090	4185	4480	4575	4870
	L (mm)	17400	18370	19640	20610	21880	22850	24120	25090	26360	27330	28600
	B (mm)	2500										
	H (mm)	2550										
	Total height (Htot) (mm)	3160										
Connection surfaces	① Tank bases (bottom) up to DN315	2										
	② Tank bases (top) up to DN315	2										
	③ Tank cylinder (sides) DN110	28	28	32	32	36	36	40	40	44	44	48
	④ Tank cylinder (top) DN200	9	9	10	10	11	11	12	12	13	13	14
	⑤ Tank dome DN160	10										

3. Technical data



Technical data	Extinguishing water removal components	A	B	C	D	E	F
	Description	Suction connection with A fixed coupling	Extension piece for intake pipe	Intake pipe including anti-vortex plate and strainer	Vent pipe with hood and sieve	Post with holder for sign (incl. sign)	Access ladder
	Material	V2A	V2A	PE/ V2A	V2A	V2A	Alu
	Weight (kg)	11.5	13.5	13	5.5	5	5
	Diameter (mm)	DN 125	DN 125	DN 125	DN 110	-	-
	L (mm)	-	-	-	-	Post: 40 Holder: 250	-
	W (mm)	-	-	-	-	Post: 40 Holder: 200	355
	H (mm)	550	1200	1300	1000	2000	3600

4. Structure of tank

① Telescopic lorry dome shaft (cover in accordance with DIN 3223 - to be provided by the customer)

② Profile seal of tank dome / telescope

③ Tank dome (can be rotated 360°)

④ Profile seal of tank / tank dome

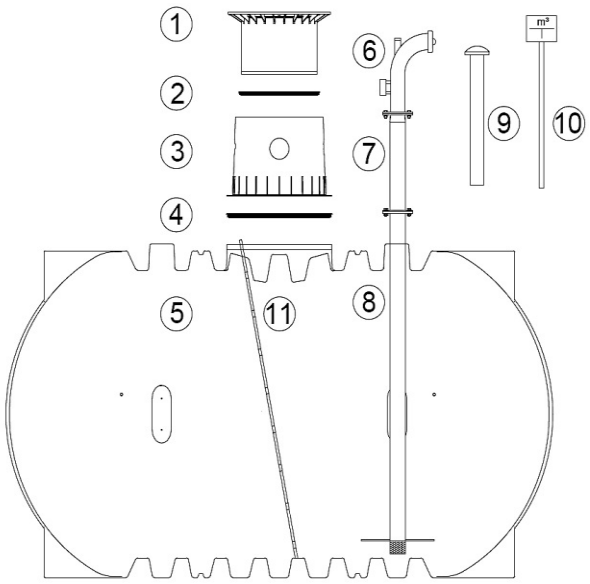
⑤ Carat XXL firefighting water tank

⑥ Suction connection with A fixed coupling in accordance with DIN 14244

⑦ Extension piece for intake pipe with DN 125 flange

⑧ Intake pipe with DN 125 flange including anti-vortex plate and strainer

⑨ DN 110 vent pipe with hood and sieve



⑩ Post with holder incl. sign in accordance with DIN 4066-B2

⑪ Access ladder including mounting kit for mounting in tank dome

The accessory pack is located in the tank, a person must enter the tank to remove it.

5. Installation

① In ground

② Telescopic lorry dome shaft (cover in accordance with DIN 3223 - to be provided by the customer)

③ Compacted base layer

④ Surround
(round gravel, max. grain 8/ 16)

⑤ Covering layer

⓪ Tank dome

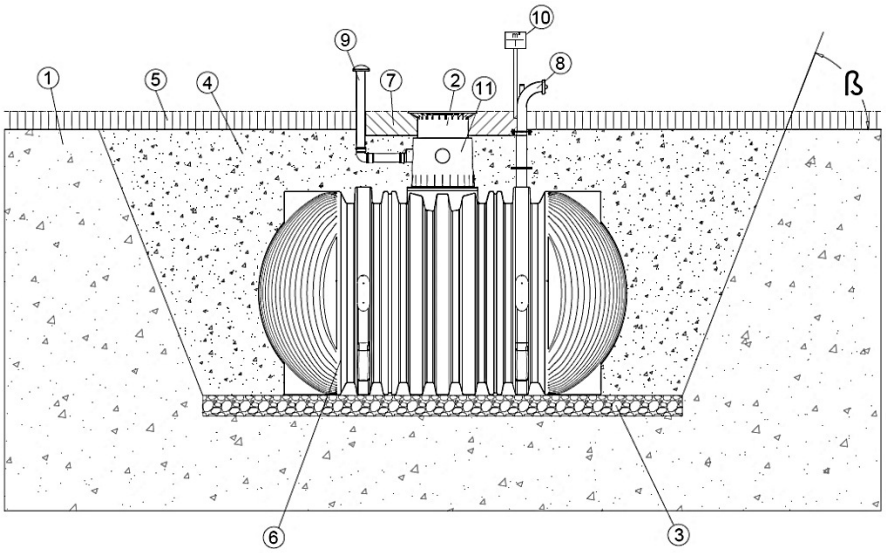
⑥ Carat XXL firefighting water tank

⑦ Concrete layer for surfaces driven on by cars/lorries

⑧ Suction connection with A fixed coupling in accordance with DIN 14244

⑨ Vent pipe with hood and sieve

⑩ Post with holder incl. sign in accordance with DIN 4066-B2



5. Installation

5.1 Installation site

The extinguishing water extraction point must be outside the debris zone of buildings. Access for the fire brigade should be provided to the extraction point from the public road. The access route must meet the requirements of DIN 12090 provided these don't contradict local requirements. Exceptions require the agreement of the body responsible for fire protection.

5.2 Covering heights

Please note that the telescopic lorry dome shaft contained in the standardised scope of supply (cover in accordance with DIN 3223 - to be provided by the customer) refers to a general coverage height of 750-1050 mm. If a different level of soil cover is needed, corresponding extension sleeve pieces must be ordered to extend it (note: max. soil cover 1500 mm).

Depending on installation and/or final finished height of the extinguishing water suction connection, the intake pipe extension sleeve supplied has to be adapted individually and/or ordered separately in the desired special length. When positioning, please note DIN 14244.

5.3 Foundation

The following criteria must be verified prior to installation:

- The structural suitability of the soil in accordance with DIN 18196
- Maximum groundwater levels/ drainage of the subsoil
- Types of loading present, e. g. traffic load

A soil survey should be requested from the local building authority to determine the physical properties of the soil.

5.4 Trench

To ensure that sufficient working space is available, the base area of the trench must exceed the tank dimensions by 500 mm on all sides. The distance from fixed structures must be at least 1000 mm.

The embankment should be built in accordance with DIN 4124. The foundation must be horizontal and even and must offer sufficient load-bearing capacity.

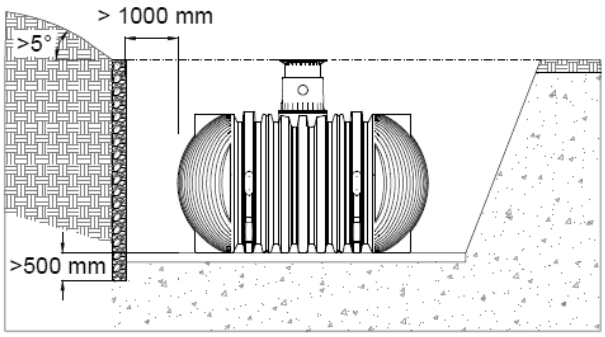
The trench must be deep enough that the maximum earth cover above the tank (see 2 - Installation conditions) is not exceeded. For the system to be usable all year round, the tank and water-carrying parts must be installed in a frost-free zone. The frost-free depth is usually around 600-800 mm; for accurate information, please contact the responsible authority.

The substructure is made from a layer of compacted round gravel (grain 8/ 16, approx. 150-200 mm thick).

5. Installation

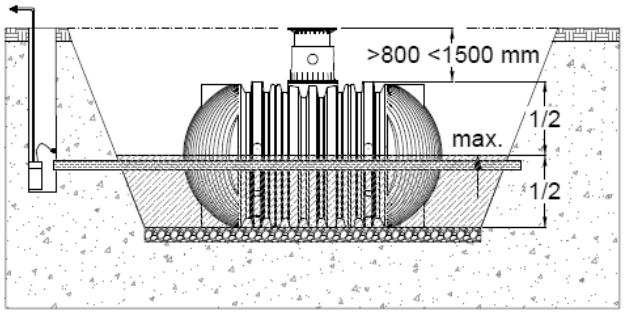
5.4.1 Positioning on a slope, embankment etc.

If the tank is installed in immediate proximity (less than 5 m) to a slope, mound or embankment, a statically calculated supporting wall must be constructed to bear the pressure of the soil. The wall must exceed the tank dimensions by at least 500 mm in all directions and must be at least 1000 mm away from the tank.



5.4.2 Groundwater and cohesive (non-water-permeable) soils (e.g. clay)

Sufficient drainage of the groundwater / seeping water should be ensured if groundwater occurs occasionally and if the soils are cohesive and water-impermeable (e. g. clay) so that the tanks never stand in more groundwater than is stated in the table. If necessary, the drainage pipe must end in a vertical DN 315 pipe in which a submersible pressure pump is fitted to pump out the excess water. The pump should be checked regularly. If the tanks are expected to be immersed deeper, sufficient drainage should always be ensured.



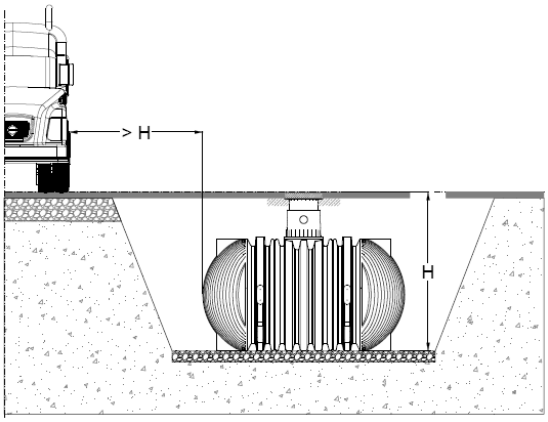
Covering heights with ground water
>800<1500 mm.

We generally recommend laying a drainage pipe because the ground water level may rise unexpectedly during long periods of rain.

Tank size	all tank sizes
Submersion depth	1275 mm

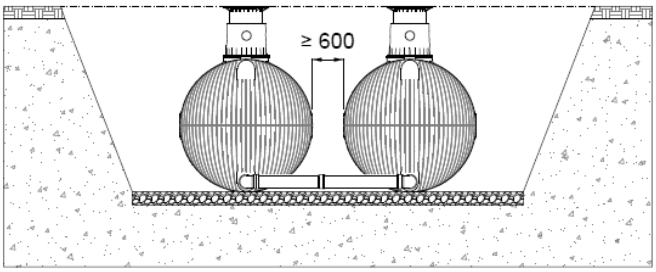
5.4.3 Installation next to driven-on surfaces

If the underground tanks are installed next to roadways used by heavy vehicles of more than 40 t, the minimum distance from these surfaces must be at least the depth of the trench.



5.4.4 Connecting multiple tanks

Two or more tanks are connected via welded DN 250 pipe connections (twice the nominal diameter of the intake pipe). The pipe connections should be positioned as far down the tank as possible. Ensure that the distance between the underground tanks is at least 600 mm.

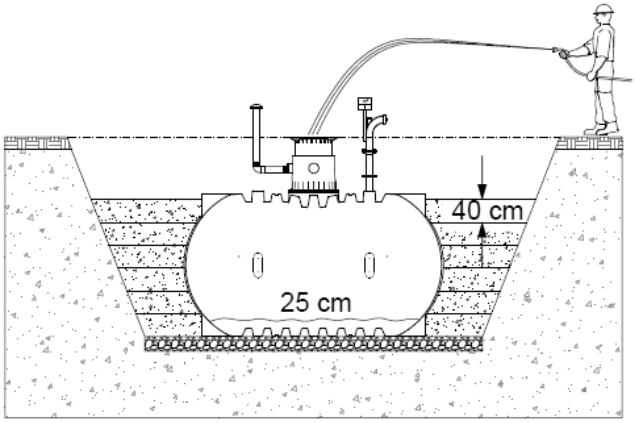


5. Installation

5.5 Insertion and filling

The tanks should be brought into the prepared trench with a suitable device without any jolts.

Before the surround is filled the tank is filled with around 25 cm water, the surround (round gravel, max. grain 8/ 16mm) is then added in layers, max. 40 cm at a time, up to the top edge of the tank and compressed. The individual layers must be well compressed with a hand tamper. Be careful to avoid damaging the tank when compressing the gravel. Mechanical compression machines must never be used. The surround must be at least 500 mm wide.

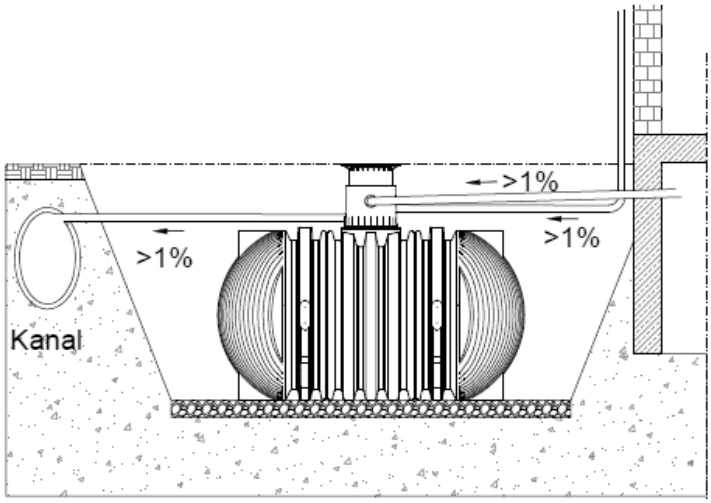


5.6 Laying connections

Wastewater must not enter the firefighting water tanks.

When filling, the water between the outlet of the filling pipe and the maximum tank water level in accordance with DIN 1988-6 must come into contact with the free atmosphere. An air cushion of at least 100 mm must be observed between the maximum water level and tank cover.

All inlet and overflow pipes must be laid with an incline of at least 1 % in the direction of flow (remember that subsequent settling may occur). If the tank overflow is connected to a public sewage network, in accordance with DIN 1986, this must be protected from backflow. All control lines must be routed in an empty pipe, which must be laid at an angle to the tank, as straight as possible without any sagging. Any bends needed should be produced using a 30° adapter.

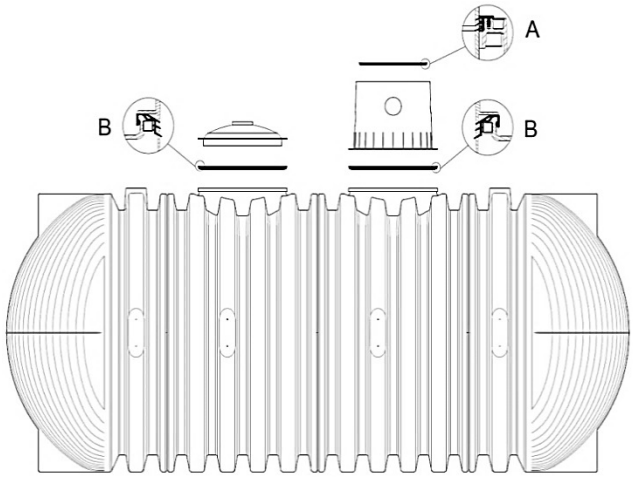


Important: The empty pipe should be connected to an opening **above** the max. water level.

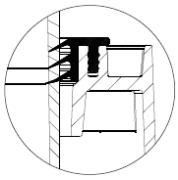
6. Fitting tank dome and telescopic dome shaft

6.1 Fitting tank dome

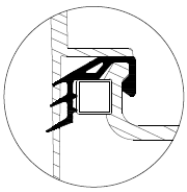
Before actually fitting, the seal provided between the tank and tank dome is slid onto the support profile of tank neck "B". The tank dome is then aligned to the pipes and slid into the tank neck up to the stop. It is essential that the upper seal "A" (already pre-mounted) is correctly positioned.



"A"

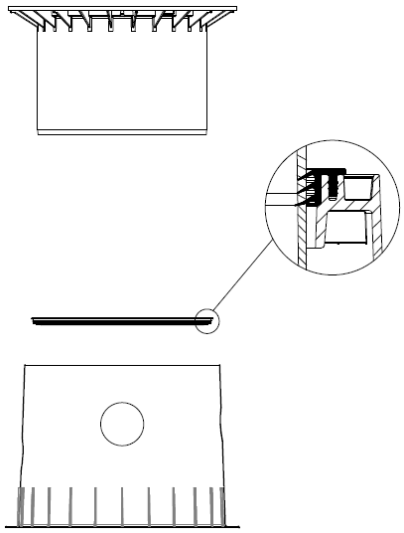


"B"



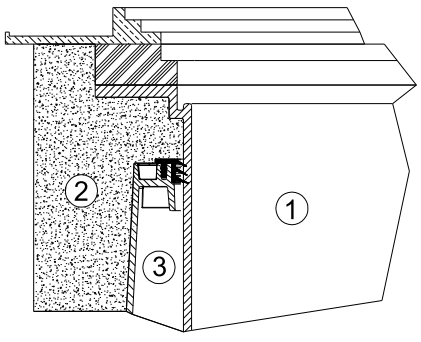
6.2 Fitting the telescopic dome shaft

The supplied telescopic lorry dome shaft (cover in accordance with DIN 3223 - to be provided by the customer) allows the shaft to be smoothly adjusted to the terrain surface. To assemble, the profile seal (material EPDM) of the tank dome is rubbed in with plenty of soft soap (do not use lubricants with a mineral oil base because they will corrode the seal). The telescopic dome shaft is then greased, slid in and aligned to the terrain surface.



6.3 Telescopic dome shaft for pedestrian loading

Important: To prevent loads from being transferred to the tank, the telescope is filled ① in layers with round gravel ② (max. grain 8/ 16) and evenly compressed. Avoid damaging the tank dome and telescope.③ The minimum covering above the tank shoulder is at least 750 mm (max. 1050 mm with telescope, coverage up to max. 1500 mm possible with extension sleeve).



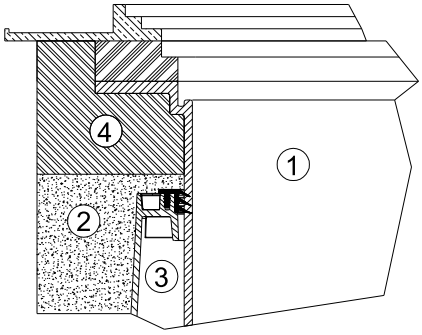
Please note that the corresponding tank cover has to be provided by the customer.

It must be possible for the cover to be opened with hydrant keys A or B in accordance with DIN 3223 and the cover must be appropriate for the loading on site.

6. Fitting tank dome and telescopic dome shaft

6.4 Telescopic dome shaft suitable for vehicle loading

If the tank is installed below a surface driven on by vehicles, the telescope ① must be lined with concrete ④ in the collar area (load class B25 = 250 kg/m²). The concrete layer must be at least 400 mm wide and approx. 200 mm high all the way round. The minimum covering above the tank shoulder is at least 800 mm (max. 1050 mm with telescope, coverage up to max. 1500 mm possible with extension sleeve).

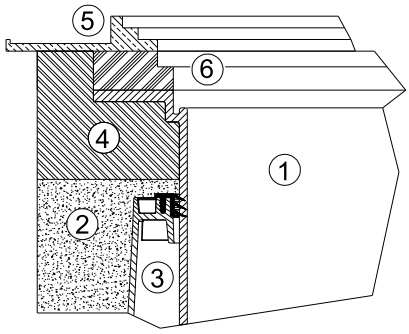


Please note that the corresponding tank cover has to be provided by the customer.

It must be possible for the cover to be opened with hydrant keys A or B in accordance with DIN 3223 and the cover must be appropriate for the loading on site.

6.5 Telescopic dome shaft lorry-bearing

When installing below surfaces driven on by lorries, the telescope ① is lined as described in 6.4. The concrete rings ⑥ (diameter 600 mm) and a cast frame ⑤ with star-shaped load distribution are then installed to support the cast cover. The cast frame must have a contact area of approx. 1 m². The minimum covering above the tank shoulder is at least 1000 mm (max. 1050 mm with telescope, coverage up to max. 1500 mm possible with extension sleeve).

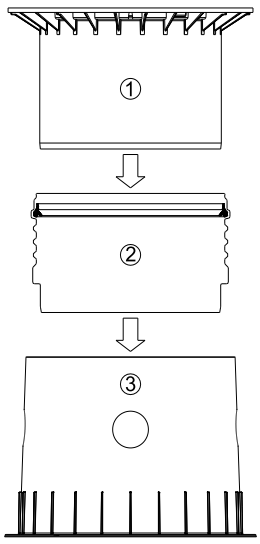


Please note that the corresponding tank cover has to be provided by the customer.

It must be possible for the cover to be opened with hydrant keys A or B in accordance with DIN 3223 and the cover must be appropriate for the loading on site.

6.6 Assembly of extension sleeve

If an extension sleeve is needed for larger earth covers it is inserted into the tank dome with the aid of soft soap. The profile seal is fitted in the topmost groove of the extension sleeve and greased with plenty of lubricant. Then slide the telescopic dome shaft into place and adjust to suit the planned terrain surface.



Please note: max. soil cover 1500 mm

① Telescopic dome shaft (tilts by 5°)

② Extension sleeve (cannot be shortened)

③ Tank dome (can be rotated 360°)

7. Extinguishing water removal components

7.1 Intake device

The intake pipe has an inner diameter of 125 mm and as standard is screwed down to the extinguishing water suction connection provided in the scope of supply in accordance with DIN 14244 by means of an A fixed coupling. Please use the washer provided with a steel insert to seal the flange!

The sealing surfaces must be clean, dry and parallel, and the flanged connections must then be tightened evenly and crosswise with a maximum torque of 85 Nm in several passes using the respective screw sets.

The extinguishing water suction connection should be built in accordance with DIN 14244 and is to be checked on site.

Depending on installation and/or final finished height of the extinguishing water suction connection, the intake pipe-extension sleeve supplied has to be adapted individually and/or ordered separately in the desired special length.

You must ensure that the extinguishing water supply and corresponding intake devices are free from frost and ice at all times.

In accordance with DIN 14230, the number of intake pipes depends on the capacity of the firefighting water tank: up to 150 m³ min. 1 pipe/ >150<300 m³ min. 2 pipes/ above 300 m³ min. 3 pipes.

7.2 Ventilation

There must be one vent pipe with an inner diameter of at least 100 mm for every intake pipe. If using several firefighting water tanks, there must be at least one vent pipe for each tank. The vent pipe must be protected from contamination and blockages.

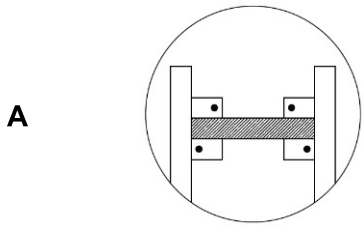
You must ensure that the extinguishing water supply and corresponding vent devices are free from frost and ice at all times.

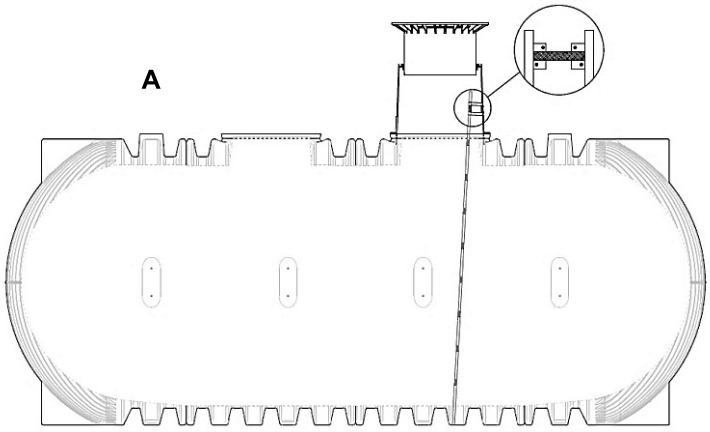
7.3 Signage

The post with holder for sign "Extinguishing Water Extraction Point", for securing directly to the intake pipe, is included in the scope of delivery. The corresponding sign in accordance with DIN 4066-B2 with the relevant extinguishing water volume details is supplied unlabeled for individual printing by the customer. The sign must be attached to the holder permanently in a highly visible place.

7.4 Access ladder

In order to ensure a safe way of accessing the tank base and rescuing people from inside the tank, the access ladder provided must be permanently installed in the tank dome with the associated mounting kit as shown in the drawing. Back protection is not permitted.





8. Inspection and maintenance

The operator of the firefighting water tank is responsible for its maintenance.
All work should be undertaken in compliance with the relevant accident prevention regulations.
A second person is required for safety reasons, especially when draining and inspecting the tanks. The responsible fire service should also be consulted.

The following applies

- Local regulations must be complied with.
- Firefighting water tanks and access roads must be maintained and serviced by suitable measures in such a way that extinguishing water can be drawn off at any time.

Maintenance interval - yearly

- Accessibility of the feed-in and draw-off points
- Check the completeness and legibility of the signage
- Check the closures of the suction pipes
- Functional test of the station including all drainage facilities
- Test suction operation
- Check the shaft cover
- Check the water level (air cushion min. 100 mm between water level and tank cover).
- Documentation of the checks performed (Annex 1)

Maintenance interval – 5 years

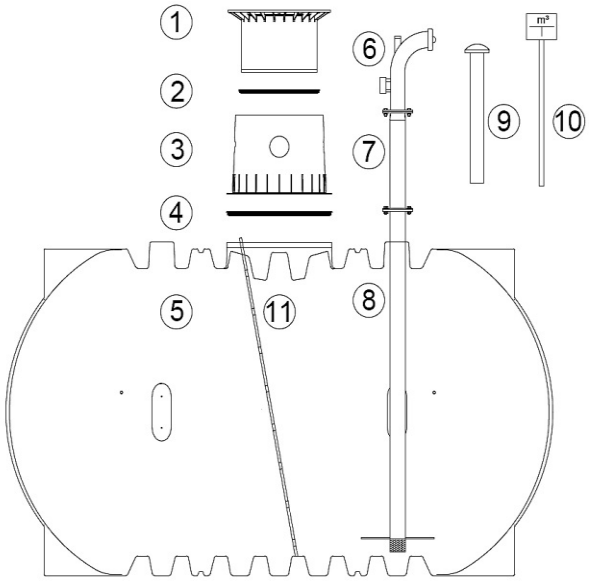
- Draining the tank
- Check strainer for soiling
- Clean the inside
- Check for internal damage

Note

In the case of heavy soiling, the source of the fault must be identified and eliminated, e.g. a missing filter in the water intake.

Structure of tank

① Telescopic lorry dome shaft (cover in accordance with DIN 3223 - to be provided by the customer)
② Profile seal of tank dome / telescope
③ Tank dome (can be rotated 360°)
④ Profile seal of tank / tank dome
⑤ Firefighting water tank
⑥ Suction connection with A-fixed coupling in accordance with DIN 14244
⑦ Extension piece for intake pipe with DN 125 flange
⑧ Intake pipe with DN 125 flange including anti-vortex plate and strainer
⑨ DN 110 vent pipe with hood and sieve
⑩ Post with holder incl. sign in accordance with DIN 4066-B2
⑪ Access ladder including mounting kit for mounting in tank dome



8. Inspection and maintenance

Annex 1

Name:	Date:	
Location:	Type:	
Accessibility of the feed-in and draw-off points	o.k.	n.o.k.
Completeness and legibility of the signage	o.k.	n.o.k.
Closures of the suction pipes	o.k.	n.o.k.
Functional test of the extinguishing water station including all drainage facilities	o.k.	n.o.k.
Test suction operation	o.k.	n.o.k.
Shaft cover	o.k.	n.o.k.
Water level (air cushion min. 100 mm between water level and tank cover).	Required:	Actual:
Soiling of the strainer (*5 year inspection*)	o.k.	n.o.k.
Comments / Measures:		
Internal damage (*5 year inspection*):		
Signature		