

IWS STRONG

TANKS



Product Range, pg. 4

Installation, pg. 6

Accessories and Warranty, pg. 10



100% reusable PE material



Resistant to Nordic climate



Safe to maintain



Resistant to mechanical damage



The PE material's guaranteed lifetime is 50 years



Dear customer!

Thank you for taking time review our catalogue of tanks!

Here you will find information on how to choose a tank and how to install it. Our tank development process focuses mainly on long-term durability, ease of installation and safety of use.

STRONG tanks are intended for collecting waste water, storm water, fire-fighting water, and utility water.

The tanks are made of PE (polyethylene), so they are also suitable for storage of various chemicals.

STRONG tanks have sturdy double-walled PE shell. Proper installation ensures smooth operation for many years.

STRONG tanks are made from strong double-wall PE pipe and when properly installed, will ensure trouble-free operation for many years.

Homeowners have three possibilities for local wastewater handling: collect wastewater into a tank, direct it into nature through a septic tank, or do the same through some other local purification system.

Tanks are intended for those, whose dwelling has no sewage system and those, who cannot install a local purification system on their plot due to restrictions imposed by local authority. We offer you a long-lasting and reliable selection of both tanks and septic tanks.

Detailed information about all our products is available at the address www.iwsgroup.ee/en.

CONTENT

PRODUCT RANGE

4

TECHNICAL CHARACTERISTICS

6

TRANSPORTATION

6

INSTALLATION

6

ACCESSORIES

10

WARRANTY

10

ORDER FORM

11

PRODUCT RANGE

		MANHOLE TYPE	DRAWING
LENGTH	1550 - 12550 mm 4360 - 12860 mm	ACCORDING TO CHOICE A, B, C, D, E, F	
VOLUME	1-10 m ³ 8-25 m ³		
INSIDE Ø	ID 1000 mm ID 1600 mm	ACCORDING TO CHOICE A, B, C, D, E, F	
LENGTH	2960 - 10960 mm 3560 - 13260 mm 6770 - 13170 mm 5670 - 13570 mm 5970 - 13670 mm		
VOLUME	3-12 m ³ 5-20 m ³ 20-40 m ³ 20-50 m ³ 25-60 m ³	ACCORDING TO CHOICE A, B, C, D, E, F	
INSIDE Ø	ID 1200 mm ID 1400 mm ID 2000 mm ID 2200 mm ID 2400 mm		

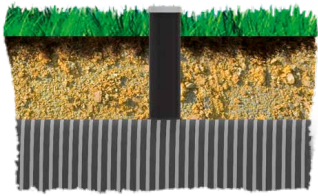
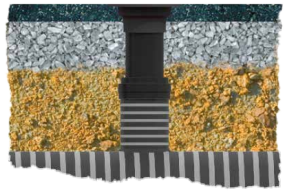
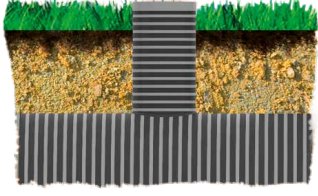
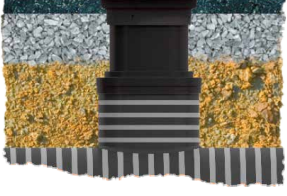
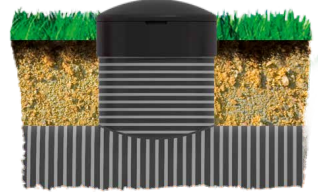

NB! Detailed drawings of the tanks can be found on our website www.iwsgroup.ee

PRODUCT RANGE

TANK DIMENSIONS

VOLUME (m ³)	ø 1000 mm/ LENGHT (mm)	ø 1200 mm/ LENGHT (mm)	ø 1400 mm/ LENGHT (mm)	ø 1600 mm/ LENGHT (mm)	ø 2000 mm/ LENGHT (mm)	ø 2200 mm/ LENGHT (mm)	ø 2400 mm/ LENGHT (mm)
1	1550						
2	2800						
3	4100	2960					
4	5350	3860					
5	6650	4760	3560				
6	7900	5660					
7	9200	6460					
8	10450	7360	5460	4360			
9	11750	8260					
10	12550	9160	6760	5360			
11		10060					
12		10960	8060	6360			
15			20060	7860			
17			11360	8860			
20			13260	10360	6770	5670	
22				11360			
25				12860	8370	6970	5970
30					9970	8270	7070
35					11570	9670	8170
40					13170	10970	9270
45						12270	10370
50						13570	11470
55							12570
60							13670

TYPES OF SERVICE OPENINGS

FOR A GREEN AREA	FOR A PAVED AREA
<p>A</p> <p>Service opening ø 200 mm, plastic cover</p> 	<p>B</p> <p>Service opening ø 200 mm, telescopic cast-iron cover ø 160 mm</p> 
<p>C</p> <p>Service opening ø 400 mm, plastic cover</p> 	<p>D</p> <p>Service opening ø 400 mm, telescopic cast-iron cover ø 315 mm</p> 
<p>E</p> <p>Service opening ø 760 mm, plastic cover</p> 	<p>F</p> <p>Service opening ø 760 mm, telescopic cast-iron cover ø 630 mm</p> 

TECHNICAL CHARACTERISTICS

- STRONG tanks are made of PE-HD (high-density polyethylene) and are suitable for collecting utility, storm, fire-fighting and waste water.
- STRONG tanks are STRONG, made of PE spiral pipe with a double wall, which resists mechanical damages that may occur when installing or using the system. This is important for prevent-

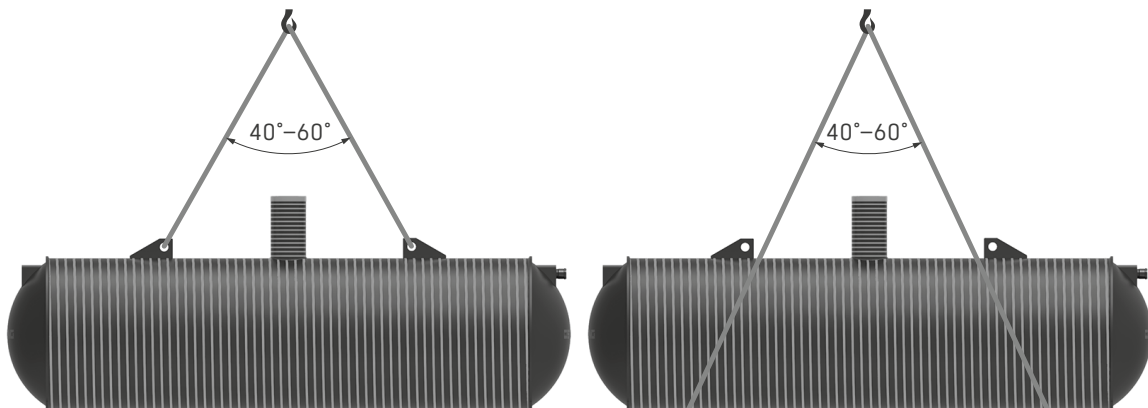
ing wastewater leakage in the soil or soil water penetration in the tank.

- STRONG tanks are light, they are easy to transport and install. A tank has eyebolts and support legs.
- STRONG tanks are made of PE (polyethylene), which is an elastic and durable type of plastic. Thus, PE is a

common material used for manufacturing septic tanks, tanks, wells, pumping stations and pressure pipes, because it is particularly durable in nordic climate. STRONG-tanks have minimum ring stiffness of SN2 (2kN/m²). In addition to that, the tank cylinder made from double wall pipe, which makes it completely leak-tight.

TRANSPORTATION

To lift the tanks, use the eyebolts on the tank and straps. Lifting points must always be at least two. Lifting straps must be used for lifting. Make sure the straps do not damage the tank's protruding parts. Do not attach steel cables or chains around the tank to lift it.



INSTALLATION

REQUIREMENTS FOR FILLING MATERIAL

Gravel and crushed stones are suitable filling materials. The filling material must be clean, freely flowing, and must not contain ice, snow, clay, organic substances, or too large or heavy objects that may damage the tank when falling onto it. Minimum required bulk density is 1500 kg/m³.

Gravel

Gravel particle size must not be less than 3 mm or more than 20 mm.

Crushed stone

Crushed stone particle size must not be less than 3 mm or more than 16 mm.

It is not recommended to use sand or excavated natural soil as backfill material. In the case of sand and natural soils, there is no guarantee that the aggregate will remain (which may be washed away) over time, which results in a reduction of the soil support in the tank with flushed aggregate and may cause the tank to become deformed there.

INSTALLING A TANK

1. The trench for the tank must be 1–1.2 metres longer and wider than the tank's dimensions. This leaves 0.5–0.6 m of space around the tank in order to allow compacting the filling material.
2. The tank's installation depth is measured according to the depth of the sewer pipe exiting the building. The decline of the sewer pipe between the building and the tank must be 1–2 cm/m.
3. The trench bottom is covered with a 300 mm thick filling material layer and compacted.
4. If the tank needs to be anchored, follow the instructions in chapter: Anchoring. In usual conditions (soil water level not rising above 0.5 m
5. Lift the tank into the trench and make sure that the tank is positioned horizontally and rests on the entire length of the substrate. Make a small cavity under the support legs of the tank to prevent the container from resting on them.
6. Then start the backfilling the tank's trench as described in the chapter: Backfill.
7. When backfill has reached the height of tank inlet pipe, connect the tank to the sewer pipe and compact the ground around the pipe.
8. When backfill reaches the final height, cut the manhole to required height and install a plastic cover or a telescopic cast-iron cover.



A tank installed without full backfilled topsoil layer may shift due to the impact of soil water. For this reason, the tank must be filled with water if backfilling works are interrupted!



INSTALLATION

ANCHORING

The tank must be anchored to neutralize the buoyancy of the groundwater and to ensure that the tank remains secure. When calculating the counterweight, take into account the maximum possible groundwater level (the surest is to consider the groundwater level to the ground) and the weight of the empty tank. In this case, the buoyancy is equal to the volume of the

tank. The anchoring can be done with either concrete slab or blocks.

Non-metallic anchor straps (nylon or similar) must be used to anchor the tank. The straps must withstand the environmental impact of the soil and the buoyancy of the tank. Metal anchoring points for concrete blocks and slabs shall be corrosion resistant.



The distance between anchoring belts must not exceed 1.5 m and at least two belts must be used.

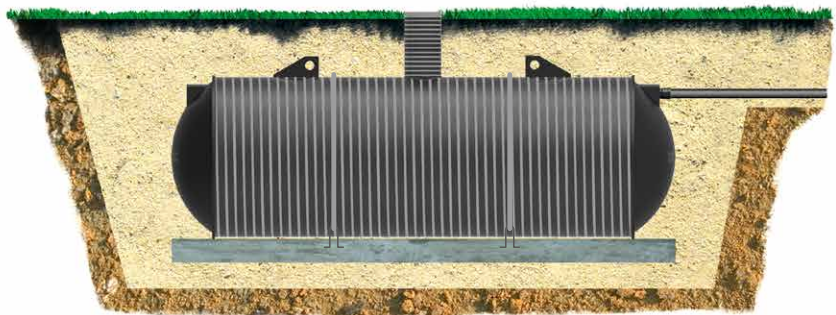
ANCHORING BY BLOCKS

Anchoring by blocks requires using at least 2 blocks outside the tank's dimensions. The blocks must be large

enough to prevent the tank from rising. Each block must be connected to the tank at least at two anchor points.



Front view



Side view

ANCHORING BY CONCRETE SLAB

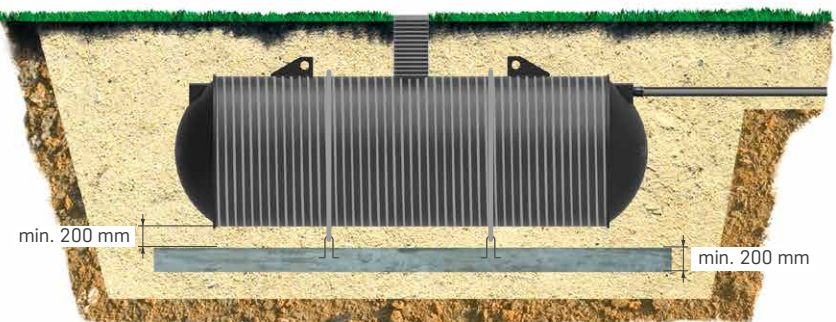
Anchoring with a concrete slab, use a 200 mm thick reinforced concrete baseplate. The baseplate shall be installed on a compact 300 mm thick, back filling substrate of at least 95%

standard density. Where soil conditions so require, sulphate-resistant concrete should be used. The base plate must extend at least 300 mm beyond the edge of the tank and be at least as long

as the tank. When anchoring to a concrete slab, a compacted sand layer of at least 200 mm must be left between the tank and the baseplate.



Front view



Side view

INSTALLATION

BACKFILLING

The tank trench is filled with 300 mm thick gravel or crushed stone on all sides, compacting each layer up to 95% of the natural density of the soil.

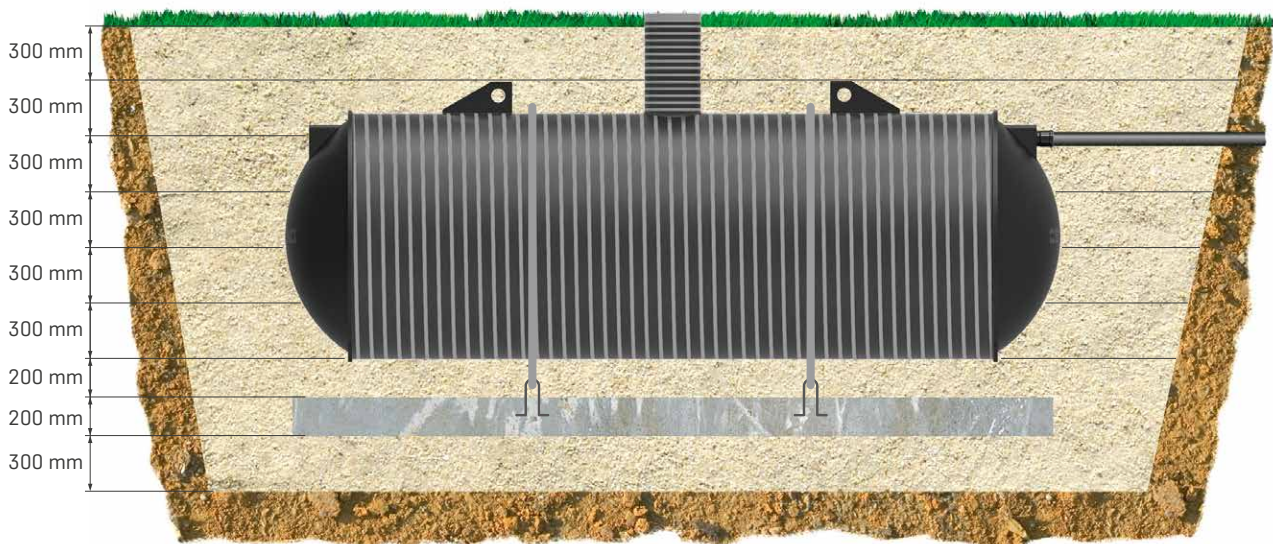
Water should be poured into the tank in parallel with the refill operation up to the current refill level. Special care must be taken at the sides and ends of

the tank and at the joints of the pipework to avoid gaps.

When installing the tank in the green area, care should be taken to ensure that the service opening of the tank is at least 100 mm above the ground to prevent rainwater from entering the tank.



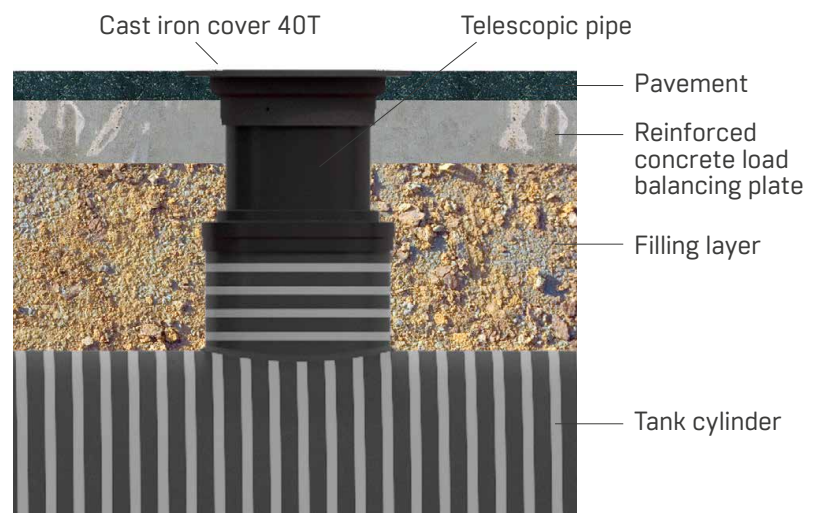
In the case of unstable soil or high groundwater, avoid using sand for backfilling.



INSTALLATION UNDER TRAFFIC AREA

To avoid traffic load on a tank installed under traffic area, the tank must be covered by a load balancing plate. The thickness of filling layer on top of the tank must be at least 500 mm. A 150 mm thick reinforced concrete load balancing plate must be installed onto the filling layer. The plate must extend at least 300 mm beyond the tank in all directions.

All tanks under a traffic area must have a cast iron cover with a telescopic pipe connecting it to the tank's service opening. This prevents traffic load on the service opening.



ACCESSORIES

ALARM DEVICE

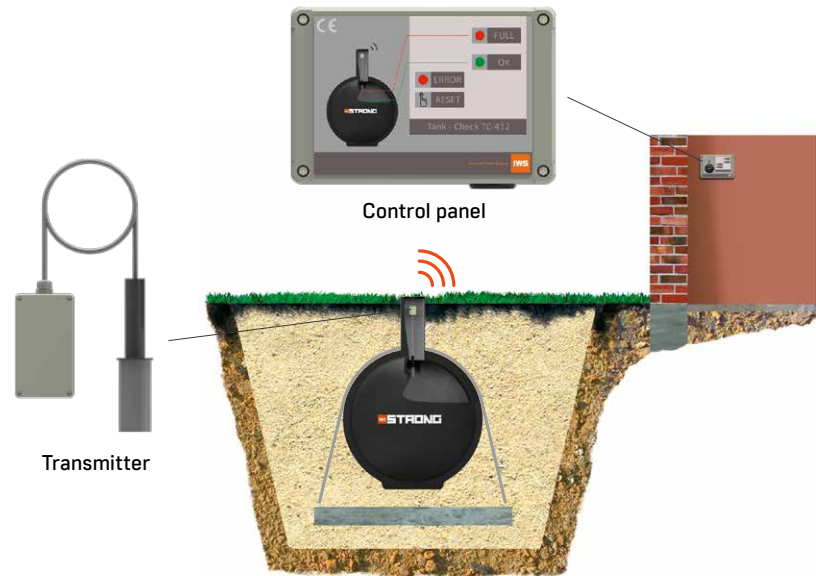
We offer an alarm device for the tank as an accessory. It is the wireless level sensor Tank-Check TC-412.

The wireless level sensor Tank-Check TC-412 has two parts:

1. A transmitter installed inside the tank manhole with a sensor monitoring the water level in the tank;
2. A control panel installed in a suitable place in the building.

The level sensor is set to suitable height and it monitors the tank's filling level, sending the data via the transmitter to the control panel. If the water level in the tank is below the set level, the green "OK" indicator lamp is lit on the control board. If the water level in the tank reaches the sensor level, the alarm activates – the red "FULL" indicator lamp will light up on the control panel and an audible alarm will sound.

When emptying the tank, always check the level sensor as well, and remove the suspended solids, which may interfere with sensor operation.



Suitable for tanks with plastic cover. In the case of tanks with cast iron cover the alarm signal may not reach the receiver.

WARRANTY

Innovative Water Systems undertakes the responsibility for the equipment's properties and for elimination of shortcomings becoming apparent during the equipment's use. The warranty terms stem from the legislation of the Republic of Estonia, and the warranty is first and foremost based on the manufacturers' warranties as long as they do not conflict with the laws of the Republic of Estonia. The warranty includes shortcomings of the equipment's or its individual elements' manufacture, materials or design.

1. General terms of warranty

1.1. The warranty is valid for 2 years i.e. 24 months in case of the product's purposeful use.

1.2. The warranty period starts from the product's handover date.

2. Warranty's validity terms

2.1. The prerequisite is the regulations in force and the installation and operation manuals required to be followed upon installation, use and maintenance of the equipment. The warranty will be valid if the equipment has been maintained regularly and used according to the manufacturer's instructions.

2.2. If the fault's identification requires that the equipment be dug out, this must be done in the presence of the manufacturer's representative.

2.3 The warranty does not include damage caused to third parties

because of a faulty product; it also does not include loss of revenue or any other similar loss.

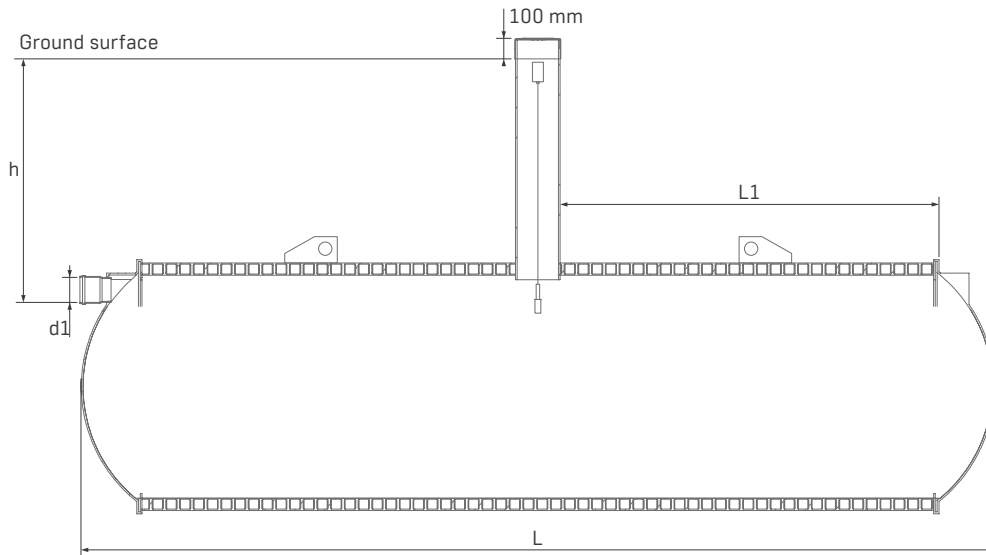
2.4. In case of a fault becoming apparent, the equipment shall be repaired, not replaced as a whole.

3. The warranty does not include:

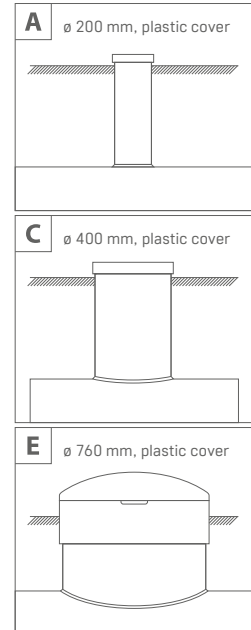
- 3.1. training for installation, maintenance and use of the equipment;
- 3.2. repairs of transport damage and other mechanical damage (caused by vandalism, lightning, fire, etc.).

The warranty does not cover shortcomings caused by insufficient maintenance, incorrect installation and repairs, or normal wear. The warranty is also void if the equipment has been reconstructed.

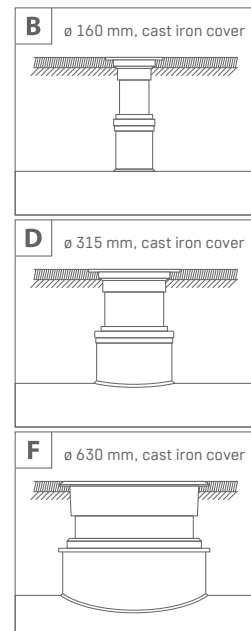
ORDER FORM



FOR A GREEN AREA



FOR A PAVED AREA



VOLUME (m³)	ø 1000 mm/ LENGHT (mm)	ø 1200 mm/ LENGHT (mm)	ø 1400 mm/ LENGHT (mm)	ø 1600 mm/ LENGHT (mm)	ø 2000 mm/ LENGHT (mm)	ø 2200 mm/ LENGHT (mm)	ø 2400 mm/ LENGHT (mm)
1	1550						
2	2800						
3	4100	2960					
4	5350	3860					
5	6650	4760	3560				
6	7900	5660					
7	9200	6460					
8	10450	7360	5460	4360			
9	11750	8260					
10	12550	9160	6760	5360			
11		10060					
12		10960	8060	6360			
15			20060	7860			
17			11360	8860			
20			13260	10360	6770	5670	
22				11360			
25				12860	8370	6970	5970
30					9970	8270	7070
35					11570	9670	8170
40					13170	10970	9270
45						12270	10370
50						13570	11470
55							12570
60							13670

Volume: m³

Inside diameter: 1000 mm 2000 mm

Height of service opening: standard 950 mm or h - mm

1200 mm 2200 mm

Type of service opening: A B C D E F

1400 mm 2400 mm

Distance of service opening: standard in centre or L1 - mm

1600 mm

Inlet pipe diameter: d1 - mm

Alarm device: Yes No

