





PRODUCTS	CAPACITY	SPECIFICATIONS IN MM						
		WIDTH	HEIGHT	LENGTH	INLET	OUTLET	LID	
HORIZONTAL TANKS	500 LITERS	845	865	1280	50/40	40 MM FEMALE	400 mm	
	1000 LITERS	1340	1030	1700	50/40	40 MM FEMALE	400 mm	
	2000 LITERS	1020	1290	1980	50/40	40 MM FEMALE	400 mm	
	2500 LITERS	1250	1360	2160	50/40	40 MM FEMALE	400 mm	
	5000 LITERS	1720	1710	2900	50/40	40 MM FEMALE	400 mm	









# Septic Tanks









## **FEATURES**

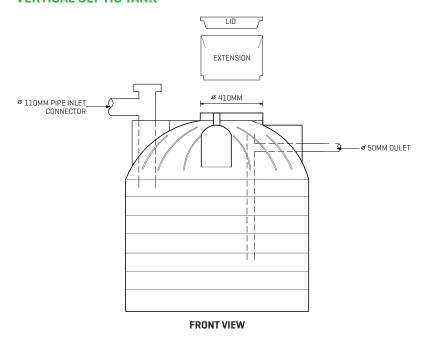
- · Made of 100% Virgin polyethylene
- Easy handling, installation and maintenance.
- · For sewerage water only.
- · Chemical and gas resistance.

## **INSTALLATION GUIDE**

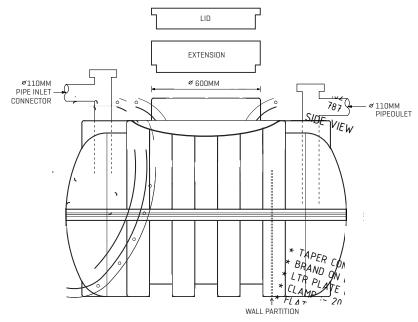
- 1 Septic tank to be installed in natural soil only.
- Prepare base layer of 150 mm in the hole for septic tank. Compact well (use hand stamped) and level it.
- 3 Place the tank in the hole and fill with the water.
- 4 Fill the tank surrounding with cohesive soil or soil-cement mixture [ 10 part soil+ 1 part cement].

  Make 300 mm layers and keep compacting. Saturate each layer with water. Repeat the procedure all the way to top.
- 5 Use FLO-TEK pipes and fittings for pipe connections.
- 6 Place bacteria starter pack into FLO-TEK septic tank to start fermentation process.

#### **VERTICAL SEPTIC TANK**



## **HORIZONTAL SEPTIC TANK**



## **SEPTIC TANK CAPACITY**

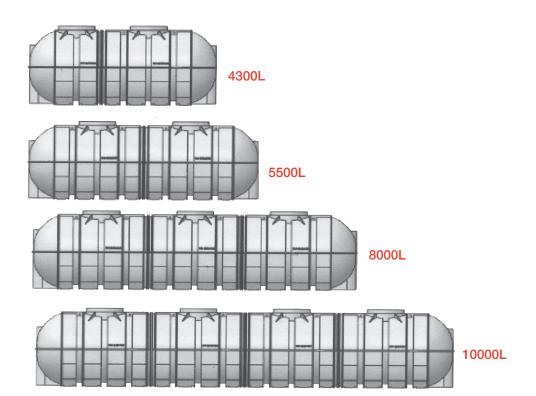
## SINGLE VERSION ■







## **WELDING VERSION**



TYPE	DIMENSI	ONS (MM)		DOMESTIC USAGE	
VERTICAL SEPTIC TANKS	TOTAL HEIGHT	DIAMETER	THICKNESS (MM)		
Septic Tank 1450 liter	1260	1320	8-9	4 -6 PERSON	
Septic Tank 1750 liter	1610	1660	8-9	6-8 PERSON	
Lid	95	480	4-5	N/A	
Extension	300	480	8-9	N/A	

## ASSUMED FLOW RATE 150-200 L PER PERSON / DAY

ТҮРЕ	DIMENSIONS (MM)				DOMESTIC	
HORIZONTAL SEPTIC TANK	TOTAL HEIGHT	WIDTH	LENGTH	THICKNESS (MM)	USAGE	
Septic Tank 2000 liter	1430	1580	1550	9-10	4 -6 PERSON	
Septic Tank 2500 liter	1430	1580	1965	9-10	6-8 PERSON	
Septic Tank 3000 liter	1430	1580	2380	9-10	6-12 PERSON	
Septic Tank 4300 liter	1430	1580	3230	9-10	12-15 PERSON	
Septic Tank 5500 liter	1430	1580	4060	9-10	15-25 PERSON	
Septic Tank 8000 liter	1430	1580	5740	9-10	25-35 PERSON	
Septic Tank 10000 liter	1430	1580	7420	9-10	35-45 PERSON	
	TOTAL HEIGHT	WIDTH	DIAMETER			
Lid	90	N/A	665	8-9	N/A	
Extension	250	N/A	610	8-9	N/A	

## ASSUMED FLOW RATE 150-200 L PER PERSON / DAY

#### **OUR NETWORK**

Botswana | South Africa | Angola | Namibia | Zambia

Botswana

Tel: +267 533 2180 | Fax: +267 533 3146

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#### INSTALLATION INSTRUCTIONS: NORMAL DRY CONDITIONS IN LOAMY SOIL

### Requirements:

The position of the excavation should be situated in such a way as to allow the easy connect ion of the incoming sewer to the inlet of the septic tank, and the link up of the outlet to the effluent disposal system.

#### **Guidelines:**

- Depending on the volume of the tank used, excavate a hole approximately 400mm in bigger than the size of the tank. (a maximum depth
  of 0.5 m fill above the inlet of the septic tank)
- · The polyethylene lid of the septic tank should be filled with concrete while standing on a flat surface and then allowed to cure.
- When the excavation is complete, ensure that the base of the excavation is undisturbed, horizontal and sufficiently hard to form a solid foundation for the septic tank when full.
- · Lower the tank into position in the hole ensuring that the tank is centrally positioned, correctly aligned and leveled. The Outlet pipe faces the soak pit and the inlet pipe swivel is ensuring a straight connection.
- The tank must be filled with water at the same time of backfilling and compacting the soil in order to balance the pressure when compacting. Only selected inert granular material should be used as backfill and should be placed in 250mm layers compacted to 90% Mod AASHO. It is particularly important to note that excavated material consisting of rock, peat or clay is not used as backfill material.
- · When the level of the backfill reaches the underside of the inlet pipe invert, the pipe connections to inlet and outlet should be made.
- The lid should then be placed in pos1ition, and there maiming 0.5m of selected inert granular backfill material should be placed over the inlet and out let pipes until flush with the finished level of this septic tank.
- In order to comply with the National Building Requirements and Building Standards Act, an inspection chamber should be placed within 2m of the inlet to the septic tank. In the event of a blockage occurring upstream of the tank, any matter causing such blockage can then be removed before it enters the system.

#### INSTALLATION INSTRUCTIONS: ABNORMAL CONDITIONS:

Where abnormal soil conditions occur such as vehicular traffic, rock, clay or high water table is enuciated the final design rests with the engineer or architect on the project or when backfill above lid exceeds 1000mm. The position of the excavation should be situated in such a way as to allow the easy connection of the incoming sewer to the inlet of the septic tank and the link up of the outlet to the effluent disposal system.

#### **Guidelines:**

As per quide lines for normal dry conditions except for base and backfill hereafter described

- Base: If the base of the excavation is unsuitable as a foundation for the tank it is advisable to over excavate and fill with either a soilcrete
  mix or concrete.
- Backfill: Over excavate the hole and remove excavated material from site. Backfill wilt either, an inert granular material a soilcrete mix of 5% cement to 95% inert granular material or cement slurry. The layers of backfill should not exceed 250mm and should be compacted to 90% Mod, AASHO. It is particularly important to note that excavated material, consisting of rock, peat or clay is NOT USED as backfill material.
- Once the backfill material has been selected, follow the same procedures of installation as for normal dry conditions.



PRODUCTS	CAPACITY	SPECIFICATIONS IN MM						
		DIA	HEIGHT	LID	INLET	OUTLET	OVERFLOW	
VERTICAL TANKS	500 LITERS	900	965	400 mm	50/40	40 MM FEMALE	NA	
	1000 LITERS	1240	1180	400 mm	50/40	40 MM FEMALE	NA	
	2000 LITERS	1400	1570	400 mm	50/40	40 MM FEMALE	NA	
	2200 LITERS	1400	1770	400 mm	50/40	40 MM FEMALE	NA	
	2500 LITERS	1455	1750	400 mm	50/40	40 MM FEMALE	40 MM REDU BUSH	
	5000 LITERS	1880	2170	400 mm	50/40	40 MM FEMALE	40 MM REDU BUSH	
	10000 LITERS	2350	2890	400 mm	50/40	40 MM FEMALE	40 MM REDU BUSH	
VERTICAL MUST (Multi Utility slim tank)	1000 LITERS	800	1950	400 mm	32/25	40 MM FEMALE	32/25	





Flo-Tek manhole/inspection chambers are made of virgin UV stabilised polyethylene (PE) material and are intended for use in underground drainage and sewerage systems. The specially designed external ribs give additional strength to the product and at the same time act as an uplift prevention system against a high water table.

The manholes are designed according to the Standard ISO 13272; 2011 and chamber size optimised as per EN 476. PE manholes have a proven 20 year track record in Europe and other countries and have many advantages over conventional concrete manholes having been installed in extremely challenging site conditions such as areas with a high water table. Flo-Tek chambers are suitable for installations inside and outside roadways.

### **Product Benefits:** -

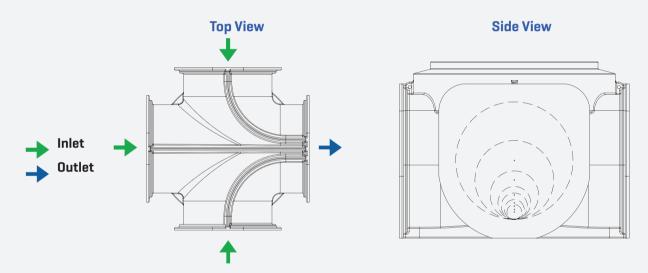
- Extreme durability with life expectancy well over 50
   Environmentally friendly watertight thus years in challenging site conditions ranging from industrial waste, acidic conditions, heavy vehicular loads and high water tables.
- Fast, easy and safe installations.
- Corrosion resistant.
- Maintenance free.
- High quality according to ISO 13272: 2011
- preventing pollution.
- European quality accessories watertight rubber seals as per EN 681-1.
  - Stable, corrosion resistant in-built steps made of high quality PE.
- Reduced operating costs due to hydraulically optimized channels and sealing system and minimum blockages.

Manhole/inspection chambers are an essential part of any sewerage pipeline system and are typically required whenever there is a change in direction, diameter or significant change in gradient of the sewerage pipeline. They are also required in domestic, commercial and municipal sewerage networks.

## **Flo-Tek Manhole Chamber Dimensions**

DIAMETER	HEIGHT RANGE	INLET DN	OUTLET DN	COVER	PERSONNEL
MM	MM	MM	MM	MM	Entry
1000	1750 - 6000	Up to 715	Up to 715	600	Yes

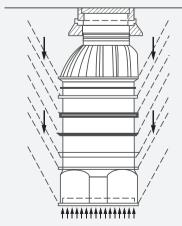
- DN1000 has 3 inlets and 1 outlet facility.
- The main channel has a gradient of 1-2 % to allow all inlets to drain towards the outlet as part of the gravity sewage network.
- Steps are inbuilt



## **UPLIFT PREVENTION**

The strategically designed ribs on the Flo-Tek chambers interlock with the soil to prevent uplift. DN1000 Flo-Tek chambers have a safety factor well over 1.8 against buoyancy caused by a high water table.





## Flo-Tek Manhole Chamber



## Flo-Tek Manhole Chamber

SIZE (mm)   DIA X HEIGHT	COMBINATION OF COMPONENTS	Weight (kg)
Manhole Chamber 1000 X 1750	1 X 1000 (B)+ 1x 750 (UU)	106,00
Manhole Chamber 1000 X 2000	1 X 1000 (B)+ 1 X 1000 (UU)	115,00
Manhole Chamber 1000 X 2250	1 X 1000(B) + 1x 250 (E) + 1 X 1000 (UU)	122,00
Manhole Chamber 1000 X 2500	1 X 1000(B) + 1x 500 (E) + 1 X 1000 (UU)	135,00
Manhole Chamber 1000 X 2750	1 X 1000(B) + 1x 750 (E) + 1 X 1000 (UU)	148,00
Manhole Chamber 1000 X 3000	1 X 1000(B) + 1x 1000 (E) + 1 X 1000 (UU)	160,00
Manhole Chamber 1000 X 3250	1 X 1000(B) + 1x 1250 (E) + 1 X 1000 (UU)	173,00
Manhole Chamber 1000 X 3500	1 X 1000(B) + 1x 1500 (E) + 1 X 1000 (UU)	185,00
Manhole Chamber 1000 X 3750	1 X 1000(B) + 1x 1500 (E) + 1 X 250 (E) + 1 X 1000 (UU)	197,00
Manhole Chamber 1000 X 4000	1 X 1000(B) + 1x 1500 (E) + 1 X 500 (E) + 1 X 1000 (UU)	210,00
Manhole Chamber 1000 X 4250	1 X 1000(B) + 1x 1500 (E) + 1 X 750 (E) + 1 X 1000 (UU)	223,00
Manhole Chamber 1000 X 4500	1 X 1000(B) + 1x 1500 (E) + 1 X 1000 (E) + 1 X 1000 (UU)	235,00
Manhole Chamber 1000 X 4750	1 X 1000(B) + 1x 1500 (E) + 1 X 1250 (E) + 1 X 1000 (UU)	247,00
Manhole Chamber 1000 X 5000	1 X 1000(B) + 2 X 1500 (E) + 1 X 1000 (UU)	260,00

Abbreviations: B = BASE | E = EXTENSION | UU = UPPER UNIT

## **Flo-Tek Inspection Chamber**

**FLO-TEK** Inspection Chambers are manufactured with different sizes and characteristics. Chambers are available as multi-piece or single-piece units. DN500, DN600, DN800 have 5 inlets and multi-dimensional outlets. In addition, inlets may be connected on the body of the chamber for an extremely flexible and easy installation. The connections can be sealed watertight with gaskets or PE welding. Light weight but strong, does not require heavy construction equipment, can be carried manually, reducing time and installation costs.

#### **Features:**

- Made of 100% virgin poly ethylene material
- · Light weight
- · Leak proof
- · Quick installation
- · Maintenance free
- · Impact resistance

## **Flo-Tek Inspection Chamber Dimensions**

DIAMETER MM	HEIGHT RANGE MM	INLET DN MM	OUTLET DN MM	COVER MM	PERSONNEL Entry
500	350 - 1250	110 / 160	110 / 160	500	No
600	350 - 1250	110 / 160	110 / 160	600	No
800	1050 - 1250	110 / 160	110 / 160	600	Yes

## **Flo-Tek Inspection Chamber Product List**



## **Connection Chambers (Electrical/Water Meter/Telecom)**



**FLO-TEK** Connection Chambers are manufactured with different sizes and characteristics. Chambers are available as multi-piece or single-piece units. Inlet and outlet connections of desired number can be made with a simple drill at desired diameter and height. The connections can be sealed watertight with gaskets or PE welding. Light weight but strong, does not require heavy construction equipment, can be carried manually, reducing time and installation costs.

.....

### **Features:**

- Connection Chambers DN 500, DN 600 and DN 800 available with height range of 500 mm to 1500 mm.
- Made of 100% virgin poly ethylene material
- · Light weight
- · Leak proof
- · Quick installation
- · Maintenance free
- · Impact resistance

## **Installation Overview**

**Important:** Consult Flo-Tek for installations in areas with a high water table. All instructions from the engineer and local regulations must be respected. An overview of the installation procedure is illustrated below. Please consult Flo-Tek for detailed instructions. Sand or non-cohesive selected material of size less than 16 mm without any sharp objects / rocks should be used as back-fill material.

## Fast, easy and safe installation in 5 simple steps:

#### 1. EXCAVATE

- a. Excavate 600 mm wider and 150 mm deeper than the chamber.
- **b.** A base layer of 150 mm should be filled and compacted to 93% MOD AASHTO.
- c. Place the chamber on the 150 mm compacted layer.
- **d.** Check the levelling to ensure chamber is horizontally aligned.

#### 2. CONNECT INLET

- a. To connect inlet pipe(s), drill a hole of appropriate diameter with a cup saw on the pre-marked inlet position(s), insert the Flo-Tek inlet rubber seal and push the pipe into the seal for a watertight connection. Soapy water may be used as lubricant. There is no need for any greasy or sticky material.
- **b.** Flo-Tek seals provide water tight connections and allow for maximum 5° movements in all directions.
- **c.** Should site constraints prevent connection of the inlet at the pre-marked location, the inlet may be connected anywhere on the body of the chamber. However, direction of the inlet/outlet in benching should be taken into consideration for proper flow.

#### 3. CONNECT OUTLET

- a. Connect the outlet pipe by making an appropriate hole at a pre-marked area of the chamber.
- **b.** Use the Flo-Tek rubber seal for a watertight connection with the PVC outlet pipe. There is no need to use silicone or glue.

#### 4. BACKFILL AND COMPACT

a. Check the level of the chamber and ensure horizontal alignment

- **b.** Back-fill material should be placed under the manhole in order to fill the gap between the manhole and the compacted layer. Use a hand stamper.
- **c.** Back fill around the manhole in layers of 300 mm and compact to 93% MOD AASHTO (cohesive soil) with a mechanical vibrating stamper (50kg).

### 5. ADJUST HEIGHT AND INSTALL COVER

- **a.** The height of the chamber can be adjusted on site by cutting the upper 'chimney' of the chamber.
- b. Flo-Tek Polyethylene (PE) lockable covers can be used for installation in the garden or non-traffic areas.
- c. For installation in traffic areas, a concrete load bearing ring around the neck of the chamber should be used. On this ring an appropriate class C/D lockable cover with frame should be installed. Flo-Tek can provide more load details on the bearing ring.





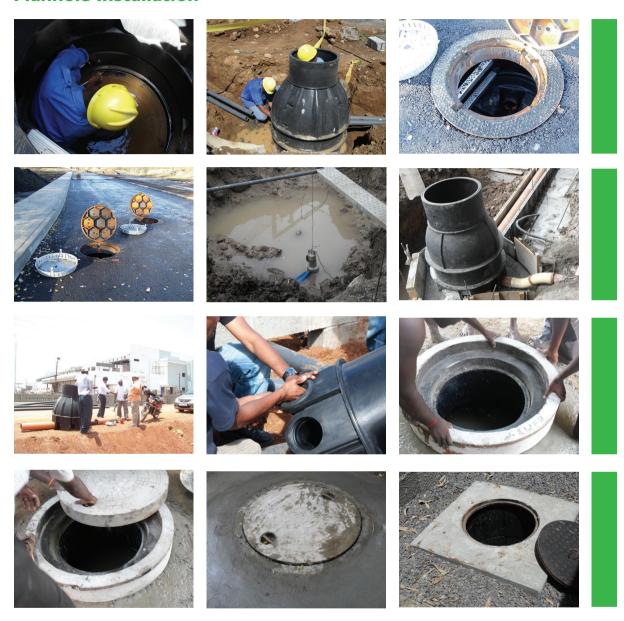








## **Manhole Installation**



### **OUR NETWORK**

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Botswana

Tel: +267 533 2180 | Fax: +267 533 3146

South Africa

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Namibia

Tel: +264 61 244239 | Fax: +264 61 232339

Zambia

Tel: +260 211 244673

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# AGRICULTURAL PRODUCTS



PRODUCT: DRUM CLOSE HEAD CAPACITY: 100L

H: 730MM DIA: 380



PRODUCT: DRUM CLOSE HEAD CAPACITY: 210L

H: 940MM DIA: 550MM



PRODUCT: DRUM OPEN HEAD CAPACITY: 100L

H: 730MM DIA: 380



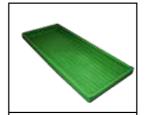
PRODUCT: DRUM OPEN HEAD CAPACITY: 210L

H: 1000MM DIA: 490



PRODUCT: CATTLE FEED TROUGH

H: 190MM W: 420MM L: 1970MM



PRODUCT: CATTLE FOOT BATH TROUGH

H: 150MM W: 850MM L: 2000MM



PRODUCT: CATTLE WATER DRINKING TROUGH CAPACITY:220L

H: 500MM W: 640MM L: 2150MM



PRODUCT: CATTLE WATER DRINKING TROUGH WITH COVER & VALVE CAPACITY:220L

H: 500MM W: 640MM L: 2150MM



PRODUCT: CATTLE WATER DRINKING TROUGH TROUGH WITH COVER, VALVE & FRAME CAPACITY:220L

H: 500MM W: 640MM L: 2150MM



# AGRICULTURAL PRODUCTS



PRODUCT: CATTLE WATER DRINKING TROUGH TROUGH WITH COVER, VALVE & FRAME CAPACITY:220L H: 500MM W: 640MM

L: 2150MM



PRODUCT: PLASTIC BOWL CAPACITY: 375L

H: 450MM DIA: 1200MM

# **SANITARY PRODUCTS**





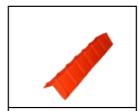


## **OTHER PRODUCTS**



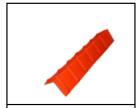
PRODUCT: CHEMICAL TANKS

Available Capacity: 500L - 10 000L



PRODUCT: CONNER PIECE

H:220MM L: 1200MM W:270MM



PRODUCT: CONNER PIECE

H:220MM L:2000MM W:1200MM



PRODUCT: TRAFFIC CONE
HEIGHT: 1000MM



PRODUCT: TRAFFIC CONE

HEIGHT: 700 mm



PRODUCT: TRAFFIC CONE

HEIGHT: 450 mm



PRODUCT: TYRE BLOCK

H:215MM L:160MM W:315MM



PRODUCT: FERTILIZER TANKS

Available Capacity: 500L - 10 000L





Um **Inovativo e confiável** parceiro em reticulação de águas de esgoto e soluções de armazenamento.

**RBR** 

## Separador de Estrada

- 1. Feito 100% de polietileno virgem.
- 2. Fácil de aplicar e remover.
- 3. Disponível em diferentes cores.
- 4. Com refletores para ser usado durante a noite.
- 5. Pode ser interligado













- 1. Feito 100% de polietilenio virgem.
- 2. Facil de mover e transportar.
- 3. Disponivel em diferentes cores.
- 4. Com refletores para ser usado durante a noite.

## FLO-TEK Angola - Produtos de sinalização Cones



Um Inovativo e confiável parceiro em reticulação de águas de esgoto e soluções de armazenamento.

## Separador de Estrada



TC1000 CONE | CONE COMO | PINOS PARA | DE SINALIZAÇÃO | CABEÇA | SINALIZAÇÃO |

TRIANGULO DE SINALIZAÇÃO TC900 CONE DE SINALIZAÇÃO



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# AGRICULTURAL PRODUCTS



PRODUCT: CATTLE WATER DRINKING TROUGH TROUGH WITH COVER, VALVE & FRAME CAPACITY:220L H: 500MM W: 640MM

L: 2150MM



PRODUCT: PLASTIC BOWL CAPACITY: 375L

H: 450MM DIA: 1200MM

# **SANITARY PRODUCTS**









## What is Grey water system?

Waste from baths and showers is grey water, it looks cloudy in appearance and can be filtered for reuse. Water from the kitchen sink, dishwasher and toilet cannot be used because it has far too many contaminants such as bacteria, greases and chemicals. Black water is extremely toxic and should be sent down into the sewerage system where right treatment is possible. Whilst grey water contains soap, detergents, hair and bacteria. It still can be recycled through water system that consists of filters and purifiers. Once this process is complete the water is clean enough to be used for watering gardens including vegetable patches.

# Advantages of Grey water recycling and reuse

- · Save municipal water used for gardening
- Reduce the damand on your resevoir
- Increase the lifespan of your septic system
- Less strain on public sewage treatment sysyem Reduction in energy use by the municipality
- Reclamation of otherwise wasted nutrients
- Ground water recharge

\*Available at majority of hardwares in Botswana



