AQUATEC®

Wastewater Treatment Plants • Below Ground Plastic Tanks • Plastic Sheet Extrusion

... because water is life ...

Water covers 70 % of our planet, whereas only 2,6 % is drinking water. That is the reason why our basic human duty is to preserve its cleanness.
***Aquatec VFL** company introduces to the market special equipment - wastewater treatment plant AT with patented **VFL** technology.*
This is the way how all of us can contribute to the global environment protection through their own effort.

... because water is life ...

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www.aquatec.sk

About Aquatec VFL s. r. o.

Based on years of experience with an international team on the purification of wastewater, the company **Aquatec VFL s. r. o.**, located in Dubnica nad Váhom, Slovakia, was established with the intention of bringing an innovative and unique residential wastewater treatment plant model, which represents the key point of its production program. This program offers a complete range of residential, pre-assembled plastic treatment plants up to 900 PE and compact reinforced concrete treatment plants up to 20 000 PE.

The philosophy of the company is to bring to European and global markets a specific type of purification plant, that meets the most stringent criteria in terms of European technology with respect to the required quality of discharged water, materials, static resistance, ease of maintenance of the wastewater treatment plants and, last but not least, affordability.

... because water is life ...

Vertical Flow Labyrinth – VFL®. Aquatec VFL uses a well-established system of the biological wastewater purification with integrated accumulation of abruptly inflowing water. The technology is also known under the international brand of Vertical Flow Labyrinth – VFL®. The technology is patented and the brand name has been copyrighted.

The technology used in the purification process ensures a high quality of treated water along with low investment and operating costs.

In 2012 the company established a line of rotational moulding of plastics and expanded its portfolio of rainwater into the production of underground plastic tanks along with the complete technological equipment. In the distribution of drinking water, the company has started producing rotomoulded watermeter shafts of a high quality.

In 2016 the extrusion line for the production of polypropylene plastic sheets was launched. The main use of the sheets is the wastewater treatment plants production and commercial sale.

Aquatec VFL s. r. o. focuses on providing services to meet the customer needs and satisfaction. The company implements its own development system and design of products. Highly qualified staff provide counseling, transportation, installation and putting into operation. The warranty, customer service and technological service are fully granted at the highest level.

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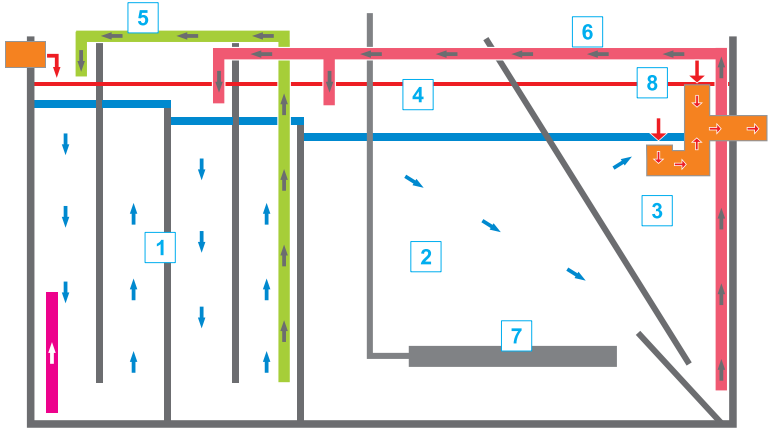
Vertical Flow Labyrinth – VFL® - Treatment process

The technology uses a continuous-flow activated sludge process with biological nitrogen and phosphorus removal, which combines the following processes in a single tank: mechanical pre-treatment, excess sludge collection, biological treatment using a low-loaded activated sludge process, separation of the treated water from activated sludge in the final clarification chamber, flow balancing of fluctuating inflow of wastewater in the retention chamber. The treatment process consists of several technological processes. Raw wastewater flows into the non-aerated activated sludge chamber with anaerobic and anoxic zones creating and admixture with the recirculated activated sludge, the mechanical pre-treatment of inflowing raw wastewater and the decomposition of coarse impurities, denitrification and accumulation of readily degradable organic contamination is taking place in the non-aerated activated sludge chamber, which is divided by inner partition walls to create a vertical flow labyrinth, where internal circulation is established.

Furthermore, allowing the admixture flow gravitationally into the aerated activated sludge chamber with includes fine-bubble diffusors. In oxic conditions the biological degradation of organic contamination, nitrification and



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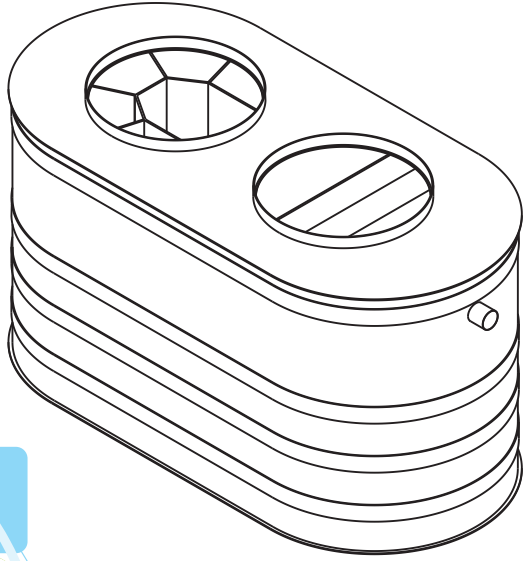
1 – Anaerobic and anoxic zones with „Vertical Flow Labyrinth“
2 – Oxic chamber
3 – Final clarification chamber
4 – Integrated retention chamber
5 – Internal recirculation
6 – Recirculation of sludge
7 – Fine-bubble diffusor
8 – Flow regulator

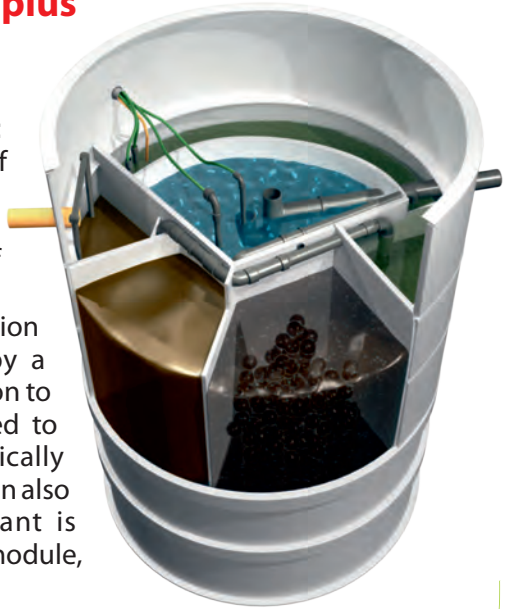
phosphorus uptake is taking place. The activated sludge flows into the final clarification chamber, where the activated sludge is separated from the treated wastewater. The treated wastewater is discharged into a water flow, infiltrated or recycled and the separated activated sludge is recirculated by air-lifts.

A flow regulator is installed at the water level in the final clarification chamber which controls the outflow in order to maintain the water level between the normal and maximum level in the tank (integrated retention chamber).

The pressurized air is supplied by blowers for aeration of the activated sludge chamber and for recirculation via air-lift pumps. The recirculation and aeration is controlled by a microprocessor control unit which also enables the wastewater treatment plant to work in various modes depending on the loading.



Vertical Flow Labyrinth – VFL® - Treatment process AT plus



The method of wastewater treatment with enhanced removal of nitrogen and phosphorus in the AT plus type wastewater treatment plant is characterized by a newly developed intermittent operation control of aeration, recirculation and mixing of the activated sludge. The short aeration pulse periods alternate with short recirculation and mixing periods, wherein the pressure air is directed either into the diffuser circuit or into the circuit of recirculation air-lift pumps.

The switching between daily cycle schedules with fixed or fluctuating duration of aeration period and recirculation and mixing period is ensured by a microprocessor control unit. If it is necessary to adapt recirculation or aeration to changes in quality and amount of wastewater, it can be simply switched to different time schedule manually or automatically based on measured parameters and this change can also be performed remotely, if the treatment plant is equipped with an appropriate communication module, e.g. GSM module.

The method of wastewater treatment with enhanced removal of nitrogen and phosphorus in the **AT plus** type wastewater treatment plant is characterized by the following processes:

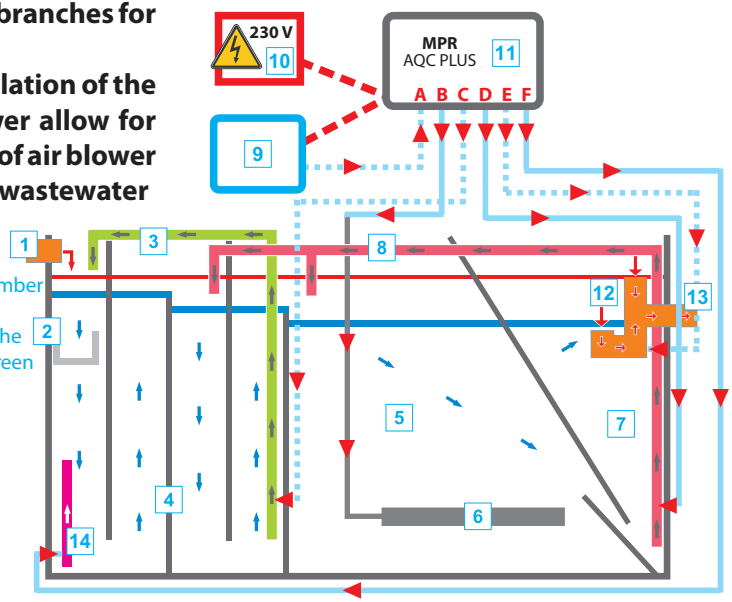
- during the short aeration period, the aeration and mixing of the activated sludge takes place in the aerated activated sludge chamber and, simultaneously, recirculation and mixing of the activated sludge in the non-aerated activated sludge chamber is stopped, or, the intensity of recirculation and mixing in the non-aerated chamber is substantially reduced. In the aerated chamber, a process of aerobic oxidation of organic substances, nitrification of reduced forms of nitrogen compounds and accumulation of phosphorus into the activated sludge takes place. Settling of heavier particles from the raw wastewater and heavier activated sludge floc particles takes place in the anaerobic zone and the

anoxic zone of the vertical flow labyrinth, while recirculation and mixing of the activated sludge mixture is stopped or intensity of recirculation and mixing of the activated sludge mixture is reduced, wherein anaerobic conditions are created closer to the bottom of the non-aerated chamber, under which process of hydrolysis and fermentation of sedimentary and colloidal biodegradable organic substances and activated sludge takes place, wherein easily available substrate is produced for denitrification and phosphor accumulating microorganisms in the activated sludge, resulting in a more efficient removal of nitrogen and phosphorus.

- during the short recirculation period, aeration and mixing of the activated sludge in the aerated chamber is stopped or intensity of aeration and mixing in the aerated chamber is substantially reduced and, simultaneously, in the non-aerated chamber, recirculation and mixing of the activated sludge takes place. In the anoxic zone of the vertical flow labyrinth denitrification process takes place in the presence of easily available substrate for the denitrification microorganisms from the recirculation in the non-aerated chamber. In the aerated chamber, the concentration of dissolved oxygen is decreased by assimilation of organic substances. In the anaerobic zone of the vertical flow labyrinth, assimilation of easily available substrate by the phosphorus accumulating bacteria takes place.

One or more two- or three-way solenoid valves serves for redirection of the pressure air alternatively into an air branch for aeration and air branches for recirculation or increase of air flow into the air branch for aeration while the air flow into the recirculation air branches for recirculation is reduced.

Non-synchronous processes of aeration and recirculation of the activated sludge using the pressure air from blower allow for energy savings for operating the air blower and use of air blower with lower capacity and also make the operation of wastewater treatment plant more comfortable and stabile.



1 - Inflow
2 - Basket screen
3 - Internal recirculation - air-lift pump
4 - Anaerobic and anoxic zones with „Vertical Flow Labyrinth“
5 - Oxic chamber
6 - Fine-bubble diffusor
7 - Final clarification chamber
8 - Recirculation of sludge - air-lift pump
9 - Air blower
10 - Power 230 V, 50 Hz
11 - Control unit AQC Plus (GSM)
12 - Integrated retention chamber
13 - Outflow
14 - Air-lift pump for mixing the content of the basket screen

History

2004

Establishment of the company - production of wastewater treatment plants using VFL technology, system of the biological wastewater purification with integrated retention, operating on the **Slovak** market.

2006

Efficiency test of WWTP according to the EN 12566-3 made **at PIA – Testing Institute for Waste Water Technology in Aachen, Germany.**

Building of company premises in Dubnica.

Production of WWTPs in **Lithuania** in cooperation with a Lithuanian partner company.

Entering the **Czech** and **Polish** markets.

2007

Mark of Conformity **CE.**

The company exclusively issues the **Declaration of Conformity in accordance with EN 12566-3.**

Entering the **Hungarian** and **Ukrainian** markets.

The launch of communal WWTPs production in **Syria.**

2008

Rotomoulded lockable cover for WWTP.

Rotomoulded conical extension for AT 10 and AT 12 plants.

Rotomoulded blower shaft with designed lockable cover.

Obtaining the **Certificate of ISO 9001 and ISO 14001.**

WWTP awarded a golden medal at the CONECO exibition in 2008.

Entering the **French, Romanian** and **Slovenian** markets.

2009

Efficiency test **"Veolia Protokol" made at PIA – Testing Institute for Waste Water Technology in Aachen, Germany.**

Expansion of warehouse premises - additional external storage space.

2011

Meeting requirements **"Aretté"** in accordance with **French legislation.**

Establishment of graphic design workplace for rotational moulding of plastics.

Entering the **German** market with **DIBt - certificate.**

... because water is life ...

2012

Establishment of the line of rotational moulding of plastics.

Launch of rotational moulding production. Production of underground and aboveground tanks for rainwater and watermeter shafts.

Launch of production of **rotomoulding forms.**

2013

Establishing an E-shop with rotomoulded products.

Entering the **Croatian** market.

2014

Entering the **Italian**, **Bulgarian** and **Greek** markets.

Testing of new type WWTP at **PIA – Testing Institute for Waste Water Technology in Aachen, Germany.**

2015

Entering the **Austrian** and **Serbian** markets.

Rebuilding and expansion of production facilities for WWTP.

Commercial sale of **AT plus.**

2016

WWTP AT plus awarded with a golden medal at the CONECO exibition 2016.

Establishing of PP (polypropylene) plastic sheets extrusion line and commercial sale of produced PP sheets.

Residential Wastewater Treatment Plants

AT6 - AT20 packaged residential wastewater treatment plants were invented to purify sewage water for detached houses. Furthermore, the purified water can either discharge into the surface or be utilized for irrigation.

In compliance with requirements of **European Norm EN 12566-3**, the residential wastewater treatment plant was subjected to a long-term efficiency test of purification, comprehensive tests of static resistance, water tightness, durability and the checking of dimensions of accessibility. The initial tests and internal control of the workshop proved that the conformity, the manufacturer declared, is in full compliance with the EU legislation. This way, **the company was authorised to label the plant "AT to 50 PE" with the CE Mark of Conformity.**

Basic description

The wastewater treatment plant consists of an all-plastic reactor with a built-in technological structure. Because of the low loaded activated sludge process with aerobic sludge stabilization, it can achieve the maximum treatment efficiency.
AT wastewater treatment plant includes a removable, lockable PE cover with stainless steel locks. The AT

Residential wastewater treatment plants: AT6 - AT8 - AT10 - AT12 - AT15 - AT20

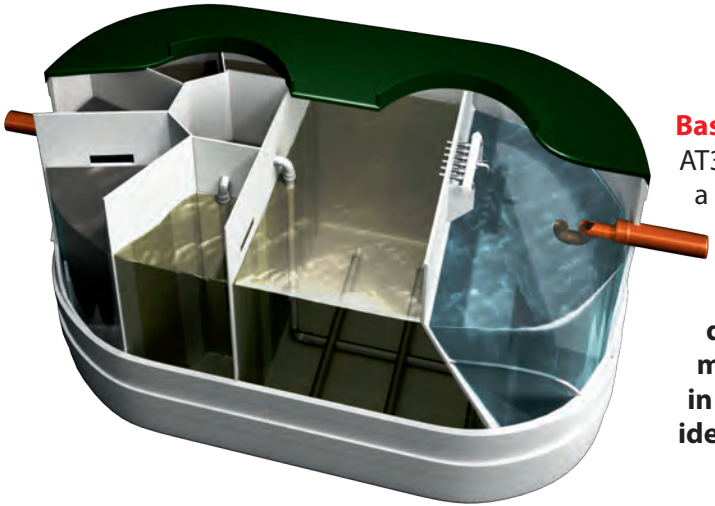
wastewater treatment plant uses a well-established system of a continuous-flow, suspended growth activated sludge process with an integrated retention chamber to handle the surge of inflowing wastewater. The treatment technology ensures the **high quality of purified water, low investment and operation costs**. The technology also can be found under the international name of **Vertical Flow Labyrinth - VFL**.

TYPE	Average daily flow [m^3/d]	Tank diameter [mm]	Tank height [mm]	Inflow height [mm]	Outflow height [mm]	DN inflow/outflow [mm]
AT 6	0,60	1400	1800	1300	1150	125/125
AT 8	0,90	1400	2200	1700	1500	125/125
AT 10	1,20	1750	2200	1500	1250	125/125
AT 12	1,50	1750	2400	1700	1500	125/125
AT 15	1,75	2050	2200	1700	1500	150/150
AT 20	2,70	2050	2700	2200	2000	150/150

cover reduction of WWTP to 600 mm

Middle-sized Wastewater Treatment Plants - OVAL DESIGN

AT30 - AT300 wastewater treatment plants are intended to treat sewage arising from blocks of houses, small villages, parts of villages, accommodation properties, restaurants, recreational properties, manufacturing factories and industrial parks. After mechanical or physic-chemical treatment of industrial wastewater with organic pollution, the plants serve as biological treatment for meat processing factories, dairy factories and slaughterhouses, wineries, etc. Biological waste water is treated and purified to the required level allowing discharging in sensitive areas with the removal of nitrogen and phosphorus.



Basic description

AT30 - AT300 wastewater treatment plants are delivered as a complete technological line consisting of one or more plastic biological reactors with an oval ground plan, a pump station with a mechanical pretreatment and a sludge tank. **The oval ground plan and dimensions of the tanks of the plants are mainly intended for implementation in widely distant locations and they are ideally transported by a regular truck.**

TYPE	Average daily flow [m^3/d]	Length x Width of reactor [mm]	Tank height [mm]	Nr. of reactors	DN inflow / outflow [mm]	Inflow / Outflow height [mm]
AT 30 oval	4,5	3350x2200	2250	1	150/150	1700 / 1500
AT 40 oval	6,0	4222x2200	2250	1	150/150	1700 / 1500
AT 50 oval	7,5	4222x2200	2440	1	150/150	2100 / 1900
AT 60 oval	9,0	4342x2200	2440	1	150/150	2100 / 1900
AT 75 oval	11,3	4466x2200	2440	1	150/150	2100 / 1900
AT 100 oval	15,0	6300x2200	2500	1	150/150	2100 / 1900
AT 120 oval	18,0	7000x2200	2500	1	150/150	2100 / 1900
AT 150 oval	22,5	7900x2200	2500	1	150/150	2100 / 1900
AT 200 oval	30,0	6300x2200	2500	2	150/150	2100 / 1900
AT 250 oval	37,5	7000x2200	2500	2	150/150	2100 / 1900
AT 300 oval	45,0	7900x2200	2500	2	150/150	2100 / 1900

Without sludge tank and pump station.

Installation

Biological reactors and sludge tank for wastewater treatment plant AT30-300 oval are installed as partly underground tanks on the concrete base slab (thickness 200-300 mm) so that the upper edge of the tank protrude approx. 100 mm above the ground.

Tanks need concrete encasement from dry concrete, or are placed into prepared holes made from concrete blocks and backfilled with sorted material, up to the top.

Concrete encasement or backfill needs to be done in layers according to the back pressure of water in the tank.

Middle-sized Wastewater Treatment Plants - CIRCULAR DESIGN

AT30 - AT900 wastewater treatment plants are intended to treat sewage arising from blocks of houses, small villages, parts of villages, accommodation properties, restaurants, recreational properties, manufacturing factories and industrial parks. After mechanical or physic-chemical treatment of industrial wastewater with organic pollution, the plants serve as biological treatment for meat processing factories, dairy factories and slaughterhouses, wineries, etc. Biological waste water is treated and purified to the required level allowing discharging in sensitive areas with the removal of nitrogen and phosphorus.

Basic description

AT30 - AT900 wastewater treatment plants are delivered as a complete technological line consisting of one or more plastic biological reactors with a circular ground plan, a pump station with a mechanical pretreatment and a sludge tank. The treatment technology ensures the **high quality of purified water, low investment and operation costs**. The technology also can be found under the international name of **Vertical Flow Labyrinth - VFL**.

TYPE	Average daily flow [m^3/d]	Tank diameter [mm]	Tank height [mm]	Nr. of reactors	DN inflow / outflow [mm]	Inflow / Outflow height [mm]
AT 30	3,75	2400	2700	1	150/150	2200 / 2000
AT 40	5,25	2850	2700	1	150/150	2200 / 2000
AT 50	7,5	2950	3000	1	50/150	2800 / 2600
AT 75	11,3	3250	3000	1	50/150	with pump station
AT 100	15,0	3500	3000	1	50/200	with pump station
AT 120	18,0	4000	3000	1	50/200	with pump station
AT 150	22,5	4500	3000	1	50/200	with pump station
AT 200	30,0	5000	3000	1	50/200	with pump station
AT 250	37,5	5300	3000	1	50/200	with pump station
AT 300	45,0	5500	3000	1	50/200	with pump station
AT 400	60,0	5000	3000	2	50/200	with pump station
AT 500	75,0	5300	3000	2	50/200	with pump station
AT 600	90,0	5500	3000	2	50/200	with pump station
AT 750	112,5	5300	3000	3	50/200	with pump station
AT 900	135,0	5500	3000	3	50/200	with pump station

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Installation

AT30 - 900 biological reactor and the sludge tank are installed as partly underground tanks on the concrete base slab (thickness 200-300 mm) allowing the top edge to protrude 1000 mm over the surface. The tanks max. depth without additional static support is 2000 mm. When deeper placing is needed or if the project documentation requires it, there is a necessity to make a concrete encasement around the tank to the specified height according to the project documentation.

Large Wastewater Treatment Plants

AT1000 - AT5000 wastewater treatment plants are intended to treat sewage arising from small villages with 5 000 population equivalent (PE), which combining the biological reactors, can be increased up to about 20 000 PE. After mechanical or physic-chemical treatment of industrial wastewater with organic pollution, the plants serve as biological treatment for meat processing factories, dairy factories and slaughterhouses, wineries, etc.

Biological waste water is treated and purified to the required level allowing discharging in sensitive areas with the removal of nitrogen and phosphorus.

Basic description

Larger biological wastewater treatment, series AT1000 - AT5000, consist of two or more parallel-connected treatment lines with the biological reactors and sludge tank in one compact unit and having additional building structures and machinery (pump station, mechanical pretreatment, sludge management, tertiary treatment, instrumentation and control, etc.).

Rotomoulding

Rotational moulding, also known as rotomoulding, is unique amongst plastics moulding processes because heating, shaping and cooling of the plastic, all take place inside the mould with no application of pressure. The concept is simple. Cold plastic powder is placed in one half of a cold mould - usually sheet steel. The mould is then closed and rotated biaxially in a heated oven. When all the powder has melted, the mould is transferred to a cooled environment. After the process is completed, the mould is opened and a product is removed. The final products are characterized by good mechanical and chemical properties. No welds are caused by processing, the product is monolithic and 100% waterproof.

The company Aquatec VFL has extensive experience in plastics processing. Based on the experience, we can offer our clients support in rotomoulding of different products. We support our customers with a wide range of services: design of rotomoulded products, 3D visualisations, static calculations, drawing documentation, production of moulds and rotational moulding of products.

We are currently focusing on production of plastic underground tanks of various sizes, and other smaller products /tanks, various covers, extensions, pots and others/, and parts for our wastewater treament plants. Since we have been using "high" technical know-how in rotational moulding, we are extremely cautious with some of our products thereby applying multilayer walls.

We have been working with several renowned material suppliers all around the world supplying us with quality materials. With the detailed inspection being held in our laboratory as well as high inspection of rotational moulding process, we are able to provide the optimal and stable quality of our products.

Main Rotomoulding Products

Low profile underground plastic tanks, for shallow and flat excavation and installation, used for rain water or sewage water, designed with a pre-made inlet.
Outlet point can be selected from pre-arranged positions during the installation.
The tanks are assembled on the compacted sub-base without using concrete foundation slab.

TYPE	Volume [m³]	Length x Width [mm]	Total height [mm]
TD 3,2	3,20	2400x2400	1180

Horizontal placed underground plastic tanks, used for pump stations, rain water or sewage water, designed with a pre-made inlet and outlet. The tanks are assembled on the compacted sub-base without using concrete foundation slab.

TYPE	Volume [m³]	Length [mm]	Total height [mm]
TH 2,3	2,30	2400	1500
TH 3,15	3,15	2400	1700
TH 4,2	4,20	2400	1920
TH 5,2	5,20	2400	2120
TH 6,2	6,20	2400	2300

CSK

Main Rotomoulding Products

Vertical under ground plastic tanks, used for pump stations, rain water or sewage water, designed with a pre-made inlet. Outlet point can be selected. The tanks are assembled on the concrete foundation slab. Backfill with 4/8 mm gravel.

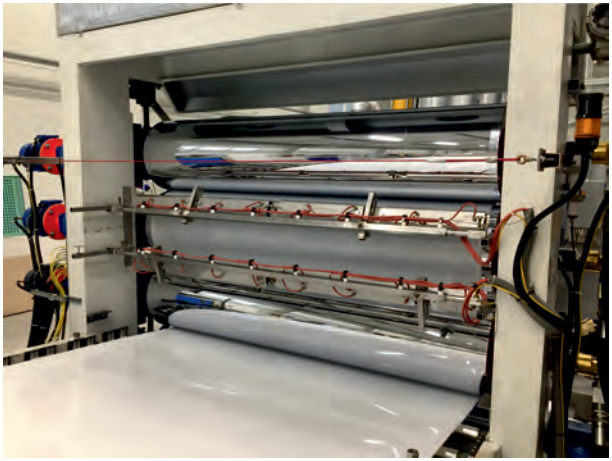
TYPE	Volume [m^3]	Diameter [mm]	Total height [mm]	Foundation
T 1	1,0	1200	1750	concrete
T 2	2,0	1600	1880	concrete
T 3	3,0	1900	2000	concrete

Watermeter shaft consists of a monolithic plastic tank whose dimensions and shape (eccentrically located revision entry) allow an entry of users in need of installation, exchange or water-gauge deduction smoothly.
Included the entire distribution is the installation of the water meter at the base of the shaft which prevents it from freezing.

TYPE	Diameter [mm]	Height [mm]	Manhole [mm]
VS 1,4	1100	1500	600 (excentric)

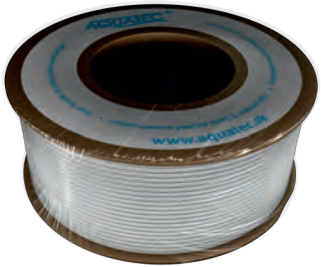
Polypropylene plastic sheet extrusion

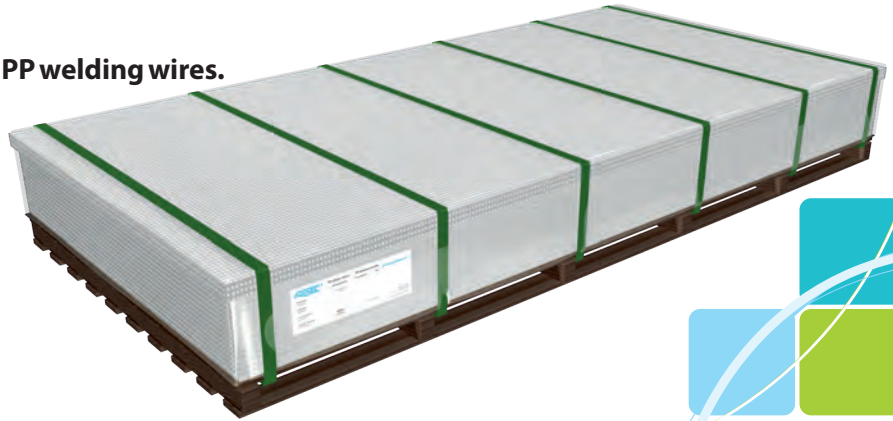
Polypropylene (PP) plastic sheets are produced on the extrusion line of plastic for plastic sheets. The main areas of application are: welding of tanks and other objects, formwork lining of different kinds and others.



The goal of setting up extrusion line was mainly to cover the internal consumption of PP plastic sheets which we need for the production of wastewater treatment plants. Later we launched the commercial sale of PP sheets.
The connection of modern technologies, many years of know-how in the field of plastic extrusion and long-standing know-how in processing of PP sheets is a guarantee of high quality products and unique possibilities for testing and processing of high-quality raw materials.

Part of extrusion is also the production PP welding wires.





Certificates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Avis et communications

AVIS DIVERS

MINISTÈRE DU TRAVAIL, DE L'EMPLOI ET DE LA SANTÉ

Avis relatif à l'agrément de dispositifs de traitement des eaux usées domestiques et fiches techniques correspondantes

NOR : ETSP1127165V

En application de l'article 7 de l'arrêté du 7 septembre 2009 fixant les prescriptions techniques applicables aux installations d'assainissement non collectif recevant une charge brute de pollution organique inférieure ou égale à 1,2 kg/j de DBO5 et après évaluation par des organismes notifiés, la ministre de l'écologie, du développement durable, des transports et du logement et le ministre du travail, de l'emploi et de la santé agréent le dispositif suivant :

– aquatec VFL ATF-8 EH (8 EH) ; AQUATEC VFL s.r.o

L'agrément de ce dispositif de traitement porte seulement sur le traitement des eaux usées.

L'évacuation des eaux usées doit respecte

La fiche technique correspondante est pré

FICHE TECHNIQUE DE TRAITEMEN

Datum: 15.09.2014

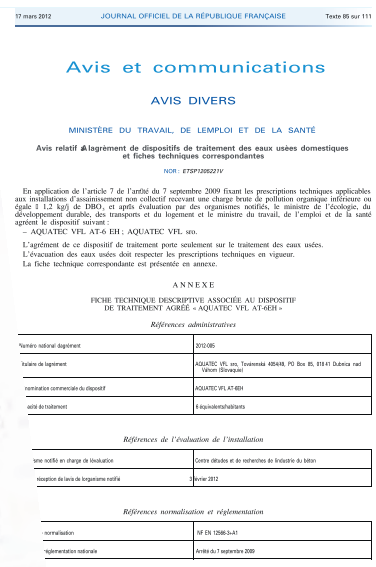
Geltungsdauer: bis 15. September 2019

Zulassungsnummer: Z-55.31-331

Antragsteller: AQUATEC VFL, s.r.o. Továrenská 4054/49 018 41 DUBNICA NAD VÁHOM SLOWAKISCHE REPUBLIK

Zulassungsgegenstand: Anwendungsbestimmungen für Kleinkläranlagen nach DIN EN 12566-3 mit CE-Kennzeichnung; Kleinkläranlagen mit Abwasserbelüftung aus Polypropylen; Belebungsanlagen für 4 bis 8 EW; Ablaufklasse C

Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen. Diese allgemeine bauaufsichtliche Zulassung umfasst sieben Seiten und zwölf Anlagen. Diese allgemeine bauaufsichtliche Zulassung ersetzt die allgemeine bauaufsichtliche Zulassung Nr. Z-55.31-331 vom 21. Juli 2010.


17 mars 2012 JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE Texte 85 sur 111

Avis et communications

AVIS DIVERS

MINISTÈRE DU TRAVAIL, DE L'EMPLOI ET DE LA SANTÉ

Avis relatif à l'agrément de dispositifs de traitement des eaux usées domestiques et fiches techniques correspondantes

NOR : ETSP1205221V

En application de l'article 7 de l'arrêté du 7 septembre 2009 fixant les prescriptions techniques applicables aux installations d'assainissement non collectif recevant une charge brute de pollution organique inférieure ou égale à 1,2 kg/j de DBO, et après évaluation par des organismes notifiés, le ministre de l'écologie, du développement durable, des transports et du logement et le ministre du travail, de l'emploi et de la santé agréent le dispositif suivant :

– AQUATEC VFL AT-6 EH ; AQUATEC VFL sro.

L'agrément de ce dispositif de traitement porte seulement sur le traitement des eaux usées.

L'évacuation des eaux usées doit respecter les prescriptions techniques en vigueur.

La fiche technique correspondante est présentée en annexe.

ANNEXE

FICHE TECHNIQUE DESCRIPTIVE ASSOCIÉE AU DISPOSITIF DE TRAITEMENT AGRÉÉ « AQUATEC VFL AT-6EH »

Références administratives

Numéro national dagrément	2012-085
Titulaire de lagrément	AQUATEC VFL sro, Továrenská 4054/49, PO Box 85, 018 41 Dubnica nad Váhom (Slovaquie)
nomination commerciale du dispositif	AQUATEC VFL AT-6EH
acité de traitement	6 équivalents/habitants

Références de l'évaluation de l'installation

isme notifié en charge de lévaluation	Centre détudes et de recherches de lindustrie du béton
réception de lavis de lorganisme notifié	3 février 2012

Références normalisation et réglementation

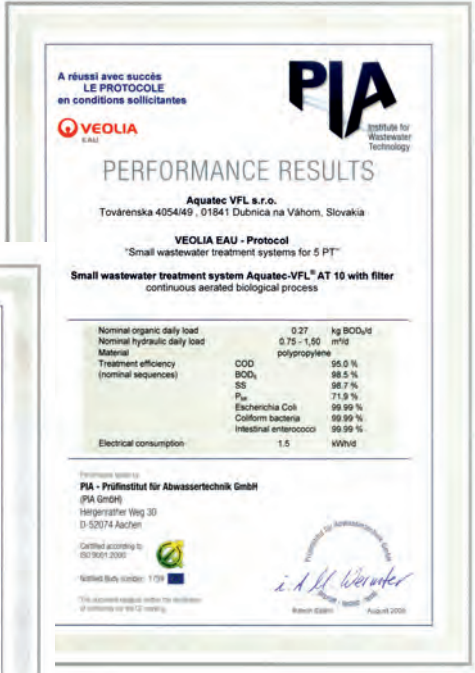
normalisation	NF EN 12566-3-A1
réglementation nationale	Arrêté du 7 septembre 2009

AQUATEC®

VFL®

Performance Results - Residential Wastewater Treatment Plants - *up to 50 PT*

AQUATEC®



A réussi avec succès
LE PROTOCOLE
en conditions sollicitantes

VEOLIA EAU

PIA Institute for Wastewater Technology

PERFORMANCE RESULTS

Aquatec VFL s.r.o.
Továrenská 4054/49 , 01841 Dubnica na Váhom, Slovakia

VEOLIA EAU - Protocol
"Small wastewater treatment systems for 5 PT"

Small wastewater treatment system Aquatec-VFL® AT 10 with filter
continuous aerated biological process

Nominal organic daily load		0.27	kg BOD_5/d
Nominal hydraulic daily load		0.75 - 1,50	m³/d
Material		polypropylene	
Treatment efficiency (nominal sequences)	COD		95.0 %
	BOD_5		98.5 %
	SS		98.7 %
	P_{tot}		71.9 %
	Escherichia Coli		99.99 %
	Coliform bacteria		99.99 %
	Intestinal enterococci		99.99 %
Electrical consumption		1.5	kWh/d

PIA - Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)
Hergenrather Weg 30
D-52074 Aachen

Certified according to ISO 9001:2000

Notified Body number: 1739

August 2006

PIA Prüfinstitut für Abwassertechnik GmbH

PERFORMANCE RESULTS

Aquatec VFL s.r.o.
Továrenská 4054/49, 01841 Dubnica nad Váhom, Slovakia

EN 12566-3
Small wastewater treatment systems for up to 50 PT

Small wastewater treatment system AT
Suspended growth activated sludge process in continuous-flow in a polypropylene tank
Test report – No PIA2014-215838

Nominal organic daily load		0.35	kg BOD_5/d
Nominal hydraulic daily load		0.90	m³/d
Material		Polypropylene	
		Efficiency	Effluent
Treatment efficiency (nominal sequences)	COD	94.4 %	45.0 mg/l
	BOD_5	98.2 %	7.0 mg/l
	SS	97.2 %	12.0 mg/l
	NH_4-N*	99.5 %	0.2 mg/l
	N_{tot}*	83.2 %	5.6 mg/l
	P_{tot}	93.3 %	0.6 mg/l
Electrical consumption		1.0	kWh/d

*determined for temperatures ≥ 12°C in the bioreactor

Performance tested by:
PIA – Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)
Hergenrather Weg 30
52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.

Notified Body number: 1739

DAkkS

Elmar Lamot

September 2014

PIA Institute for Wastewater Technology

PERFORMANCE RESULTS

AQUATEC VFL s.r.o.
Továrenská 4054/49, 018 41 Dubnica nad Váhom
Slovakia

EN 12566-3 annex B
"Small wastewater treatment systems for up to 50 PT"

Small wastewater treatment system VFL® bioreactor AT10

Nominal organic daily load		0.32	kg/d
Nominal hydraulic daily load		1.20	m³/d
Material		Polypropylene (PP)	
Treatment efficiency (nominal sequences)	COD		88.1 %
	BOD_5		97.2 %
	SS		94.0 %
	NH_4-N*		96.7 %
	N_{tot}*		61.7 %
	P_{tot}		47.4 %
Electrical consumption		1.7	kWh/d

* determined for temperatures ≥ 12°C in the bioreactor

Performance tested by:
PIA - Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)
Hergenrather Weg 30
D-52074 Aachen

Certified according to ISO 9001:2000

Notified Body number: 1739

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Elmar Lamot

June 2006

VFL®

Partner Companies

AQUATEC®

Dubnica nad Vahom, Slovakia
- production of WWTP
- rotomoulding production
- polypropylene plastic sheet extrusion
- complete service

19 A 98 AUGUST

Vilnius, Lithuania
- production of WWTP
- complete service

Wastewater Treatment Plants References

Algeria
Austria
Belarus
Bulgaria
China
Columbia
Croatia
Czech Republic
Estonia
France
Germany
Hungary
Italy
Latvia
Lithuania
Mexico
Morocco
Poland
Romania
Russia
Saudi Arabia
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Syria
Tunisia
Ukraine

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AUGUST 19A98

Photo Gallery

Residential Wastewater Treatment Plants

Photo Gallery

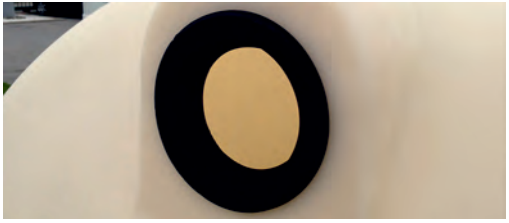
Middle-sized Wastewater Treatment Plants
CIRCULAR and OVAL

Photo Gallery

Large Wastewater Treatment Plants

Photo Gallery

Underground Plastic Tanks, Watermeter Shaft



AQUATEC®

Wastewater Treatment Plants • Below Ground Plastic Tanks • Plastic Sheet Extrusion

www.aquatec.sk

... because water is life ...