AQUATEC®

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

www.aquatec.sk

... because water is life ...

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

... because water is life ...

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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 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. Regarding 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 guaranteed at the highest level.

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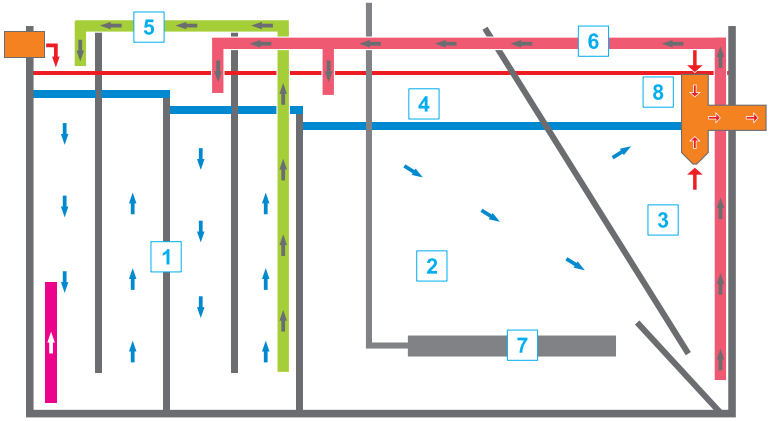
Vertical Flow Labyrinth – VFL® - Treatment process

AT type wastewater treatment plants use continuous-flow activated sludge process with a continuous discharge pattern. The wastewater treatment plant consists of a biological reactor which combines the following processes in one tank: **mechanical pretreatment, accumulation of excess sludge, biological purification by a low draining process, separation of purified water from activated sludge in the final clarification chamber and equalization of uneven wastewater flow in the retention space.**

The cleaning process consists of a sequence of several technological processes. The raw wastewater flows to a non-aerated activation part with anaerobic and anoxic zones and forms an activated sludge activation mixture. Mechanical pre-treatment of wastewater and solids degradation takes place in this part. The non-aerated activation part is divided by several internal dividing walls forming a vertical flow labyrinth in which internal circulation is established.

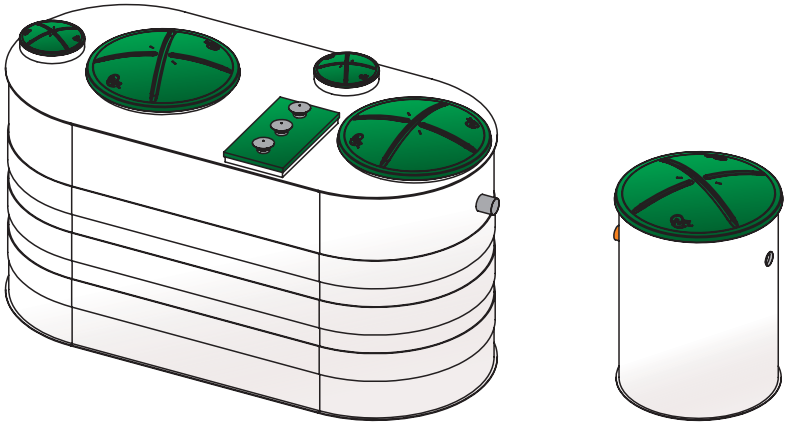


1 – Anaerobic and anoxic zones with „Vertical Flow Labyrinth“
2 – Oxic chamber
3 – Final clarification chamber
4 – Integrated retention chamber
5 – Internal recirculation
6 – Recirculation of sludge
7 – Fine-bubble diffusor
8 – Flow regulator

Furthermore, the wastewater flows gravitationally into the aerated low-activation chamber where, in the presence of oxygen, biological degradation of organic pollution occurs and nitrification of ammoniacal nitrogen. Pressurized air is injected into the aerated space through fine aerobic aeration elements.

Another stage of purification is the separation (final clarification) where the purified water is separated from the activated sludge, the purified water is discharged into the water stream, or recycled. Separated activated sludge is returned to the system by air lift from the bottom of the final clarification chamber into the non-aerated or aerated parts. In this section, there is a flow regulator that allows you to use the built-in retention space in the wastewater treatment plant to prevent overload of the plant. This creates conditions for discharging wastewater into the groundwater and for recycling of biologically purified wastewater as the outflowing water does not break down the pores of the filter bed of the substrate or the filtering devices.

The compressed air supplied by the blowers is controlled by the AQC Basic microprocessor control unit, which can be operated in different modes depending on the load. In this case, the intensive operation, when the compressed air flows into the aeration circuit and simultaneously into the overflow circuit phases alternate with the phases of rest, when the blower is inactive.



Vertical Flow Labyrinth – VFL® - Treatment process AT PLUS

AT PLUS type wastewater treatment plants use continuous-flow activated sludge process with a continuous discharge pattern. The plant, as well as the AT wastewater treatment plant, consists of a biological reactor which combines the following processes in one tank: mechanical pretreatment, accumulation of excess sludge, biological purification by a low draining process, separation of purified water from activated sludge in the final clarification chamber and equalization of uneven wastewater flow in the retention space. The cleaning process is the same as for AT.

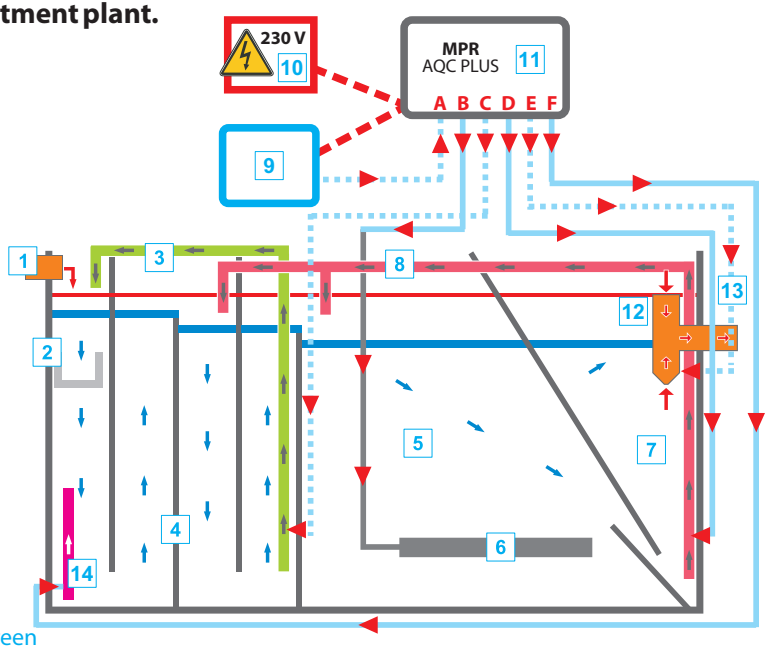
PLUS is a high-grade wastewater treatment plant designation, the AQC PLUS control unit is used to control the plant. The air distributor is located directly in the control unit, therefore the control unit electronically controls not only the operating modes but also the air flow into the individual circuits.

AQUATEC ®

VFL ®

The air pump works intermittently. There alternate the phase of aeration, phase of recirculation and mixing and stop phase. The pressure air from the air pump is divided by a three-way solenoid valve alternately either to the aeration circuit or to the circuit of recirculation by air-lift pumps. Programs differ particularly in duration of phase of aeration, recirculation and stop phase, wherein one aeration phase, one recirculation and mixing phase and one stop phase represent a single cycle which is repeated the whole day. Changing the mode of operation of the plant can be done manually, automatically or remotely using the GSM module in the control unit.

Wastewater purification method with increased nitrogen and phosphorus removal in the AT PLUS type cleaner allows you to save energy for blower operation and use a lower-capacity blower. It also improves the comfort and stability of the wastewater treatment plant.



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 Wastewater 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 for wastewater treatment production.**

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 Wastewater 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 Wastewater Technology in Aachen, Germany.**

PIA Prüfinstitut für Abwassertechnik GmbH

2015

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

Rebuilding and expansion of production facilities for WWTP.

Commercial sale of **AT PLUS including the GSM control for WWTP.**

GSM control

2016

WWTP AT PLUS was awarded with a Golden Medal at the CONECO exibition 2016 as innovative and energy saving solution.

Construction of a new production hall for the extrusion of polypropylene plastic sheets. **Establishment of extrusion line for production of polypropylene plastic sheet and wires.**

2016

Complete coverage of PP plastic sheet demands for our own production of wastewater treatment plants.

Entering the **Swiss** market.

2017

Introduction of new product range of **oval shape wastewater treatment plants**.

2018

Certificate **ISO 9001** and **ISO 14001 for extrusion** production.

2019

Filter test with **UV-disinfection** regarding **EN 12566-7**, **PIA** Aachen.

Commercial sale of **AT oval iPS.**

2020

Expansion of PP plastic sheet production.

AQUATEC®

We are a member of

Asociácia čistiarenských expertov SR

We are a corporate member of the "Association of Treatment Experts in the Slovak Republic", which operates in the form of working groups, inter alia, in the field of household WWTP. - ***www.acesr.sk***

Bildungs- und Demonstrationszentrum für dezentrale Abwasserbehandlung – BDZ e.V.

BDZ is an initiative for the promotion of decentralized wastewater treatment. BDZ domicile is in Leipzig, Germany. BDZ is growing to be a paneuropean organisation representing the producers from the branch of wastewater treatment. - ***www.bdz-abwasser.de***

DWA Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V.

German association for water management, wastewater and waste. Association brings together experts and companies, aiming to exchange information on a practical and professional level. DWA also certifies German companies which may perform services for residential WWTP. - ***www.dwa.de***

The Czech Water Association

We are a corporate member of CzWA which associates experts, companies and institutions wishing to contribute to the effective and sustainable development in the field of water management and water environment protection.- ***www.czwa.cz***

APMS Syndicat des professionnels des micro-stations

We are a member of the Union of Experts for Domestic Wastewater Treatment Plants in France. APMS participates and contributes to several normative and regulatory groups involving WWTP experts. - ***www.syndicat-apms.fr***

Association of Rotational Moulding (Central Europe)

ARM-CE is an association of rotomoulding producers for central Europe with the domicile in Germany. Producers from rotomoulding branch have the option to exchange knowledge and experience at an international level. - ***www.rotational-moulding.de***

Residential Wastewater Treatment Plants

AT 6 - AT 20 and AT 6 PLUS - AT 20 PLUS residential wastewater treatment plants were invented to purify sewage water for detached houses. Furthermore the purified water can either discharge into the surface or underground water, respectively it can be reused 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 plants up 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 technology. Because of the low loaded activated sludge process with aerobic sludge stabilization, it can achieve the maximum treatment efficiency. Every AT wastewater treatment plant includes a removable, lockable PE cover with stainless steel locks. The AT 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.

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

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**.

Tested at PIA
Testing Institute for Wastewater Technology in Aachen, Germany

Remote control of WWTP

High quality and verified technology

WWTP Type	Designed daily flow [m^3/day]	Designed daily load [kg BOD_5/day]	Usable volume [m^3]	Tank diameter/height [mm]	Height and DN inflow/outflow [mm]	Weight [kg]	Blower AT/AT PLUS [W]
AT 6 / AT 6 plus	0,60	0,24	1,7	1400/1800	1300/1150/DN125	105	60/50
AT 8 / AT 8 plus	0,90	0,36	2,2	1400/2200	1700/1500/DN125	125	60/60
AT 10 / AT 10 plus	1,20	0,48	3,1	1750/2200	1500/1250/DN125	195	80/60
AT 12 / AT 12 plus	1,50	0,60	3,7	1750/2400	1700/1500/DN125	225	100/80
AT 15 / AT 15 plus	1,95	0,78	5,1	2050/2200	1700/1500/DN150	330	120/100
AT 20 / AT 20 plus	2,70	1,08	6,7	2050/2700	2200/2000/DN150	405	150/120

Accessories – residential wastewater treatment plants

AQC BASIC GSM

AQC BASIC

tank for the blower

blower

AQC PLUS GSM

Simple installation of AT wastewater treatment plants

WWTPs of the type AT 6 to AT 20 and type AT 6 PLUS - AT 20 PLUS are installed into a pit with a 15 cm thick reinforced concrete slab on the bottom, so that the upper edge of the WWTP tank overlaps about 5 cm above the terrain. If necessary, and if the design documentation requires it, the WWTP is to be concreted to the height specified by the project documentation. WWTP must be filled with water (to the outflow pipe level) before doing the backfill. Detailed instructions for installing of WWTPs are given in the operating instructions annexed. The Aquatec VFL technical team can take care of the installation.

cover reduction of WWTP to 600 mm

Oval Wastewater Treatment Plants - AT30 oval to AT250 oval

The range of oval wastewater treatment plants from **AT30 oval to AT250 oval** is designed for decentralized and semi-centralized solutions of wastewater treatment in the range of **4,5 up to 37,5 cubic meters per day (30PE-250PE)**. Supplied separately or as a complete technological line extended with a pumping station with mechanical pre-treatment and sludge tank.
The oval wastewater treatment systems can be installed in parallel lines to **expanded up the capacity** .

AT 30 oval to AT 250 oval wastewater treatment plants were invented to purify sewage water for blocks of houses, small villages, parts of a village, accommodation properties, restaurants, recreational properties, manufacturing factories, industrial parks. After preliminary purification of industrial wastewater with organic pollution the plants serve as biological treatment for meat processing factories, dairy factories and slaughterhouses, wineries, etc. **Furthermore the purified water can either discharge into the surface or underground water, respectively it can be reused for irrigation.**

intergrated tank for the blower

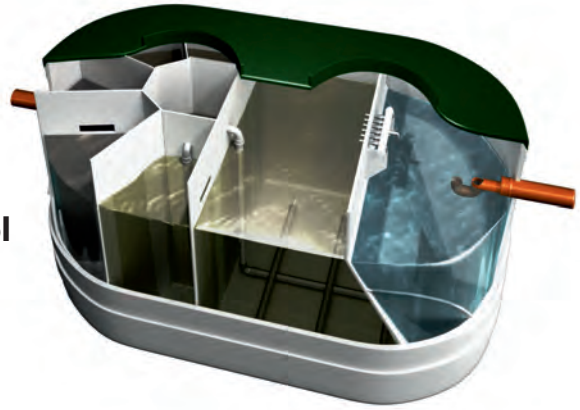
230 V electrical connection

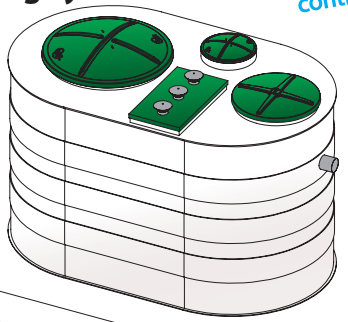
reinforced design backfill with sorted material

truck or container transport

stainless steel locking system

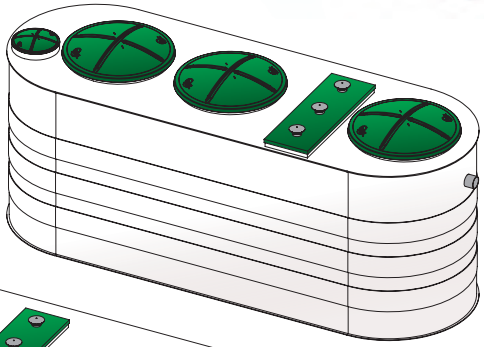
GSM control Remote control of WWTP





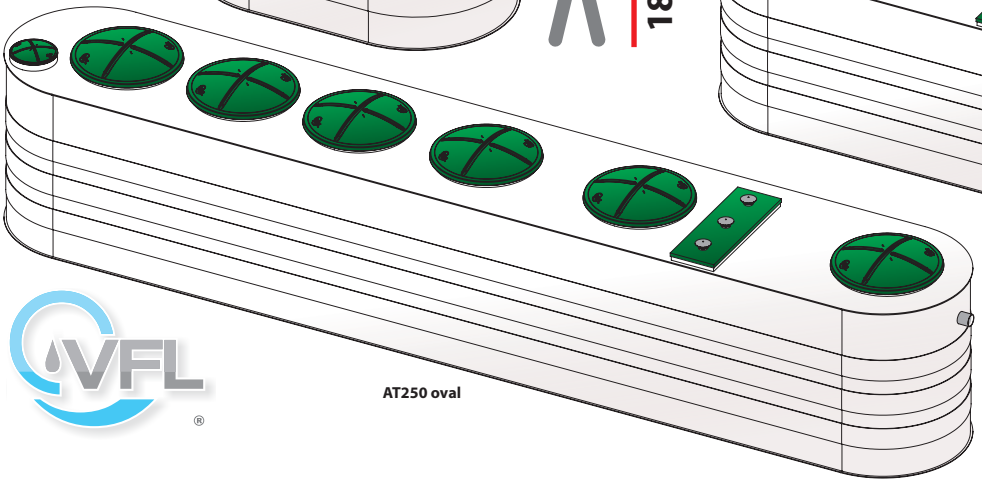
AT30 oval

180 cm



AT100 oval

180 cm



AT250 oval

VFL®

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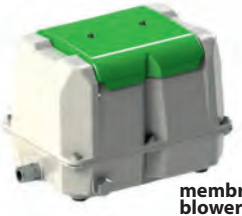
WWTP Type	Designed daily flow [m^3/day]	Designed daily load [kg BOD_5/day]	Usable volume [m^3]	Length x Width x Height of tank [mm]	Height inflow/outflow [mm]	Weight [kg]	Power input [kW]
AT 30 oval	4,50	1,80	11,60	3720x2260x2250	1700/1500	750	0,36
AT 40 oval	6,00	2,40	15,00	4660x2260x2250	1700/1500	850	0,45
AT 50 oval	7,50	3,00	19,50	4850x2260x2500	2200/1900	940	0,45
AT 75 oval	11,30	4,50	19,80	5160x2260x2500	2200/1900	1040	0,72
AT 100 oval	15,00	6,00	25,50	6410x2260x2500	2200/1900	1400	0,72
AT 120 oval	18,00	7,20	28,50	7110x2260x2500	2200/1900	1460	0,90
AT 150 oval	22,50	9,00	35,00	8560x2260x2500	2200/1900	1750	1,08
AT 175 oval	26,30	10,50	40,50	9760x2260x2500	2200/1900	2000	1,08
AT 200 oval	30,00	12,00	45,30	10960x2260x2500	2200/1900	2230	1,35
AT 225 oval	33,80	13,50	49,80	12000x2260x2500	2200/1900	2360	1,35
AT 250 oval	37,50	15,00	60,00	13460x2260x2500	2200/1900	2800	1,35

AQC BASIC control unit with GSM module



membrane blower

Installation of WWTP types AT 30 oval - AT 250 oval

Are installed into the prepared hole as underground tanks on a concrete slab with a thickness of about 300 mm so that the top edge of the revision manholes overlaps about 50 mm above the terrain. Wastewater treatment plant is reinforced, without the need of putting concrete around.

The backfill of the tanks is done with a sorted material.
The backfill should be done by layers, while creating a back pressure by filling the water into the tank.

Oval Wastewater Treatment Plants - AT30 to AT225 oval iPS

The range of oval wastewater treatment plants from **AT30 to AT225 oval iPS** is designed for decentralized and semi-centralized solutions of wastewater treatment in the range of **4,5 up to 33,8 cubic meters per day (30PE-225PE)**. Supplied separately, with **integrated pumping station** with mechanical pre-treatment. Technological line can be extended with sludge tank.

Integrated Pumping Station (iPS):

- volume 2,2 m^3
- 3 floats (min., working, emergency)
- option to install one or two pumps
- GSM control for pumps
- 230 V pumps
- control unit AQC iPS

GSM control

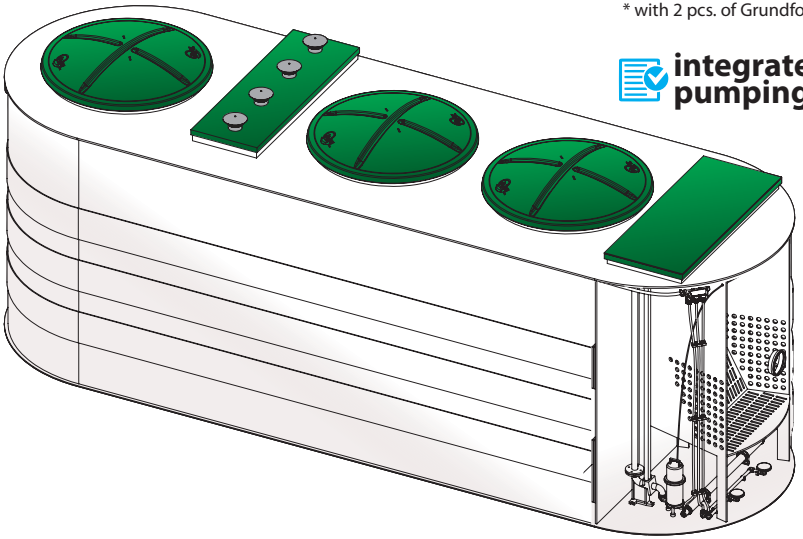
GSM monitoring for WWTP and pumps

WWTP Type	Designed daily flow [m^3/day]	**Designed daily load [kg BOD_5/day]**	Usable volume [m^3]	**Length x Width x Height of tank [mm]**	Height inflow/outflow [mm]	**Weight [kg]**	Power input [kW]*
AT 30 oval iPS	4,50	1,80	14,0	4660x2260x2250	1200/1500	1130	2,96
AT 40 oval iPS	6,00	2,40	17,8	4850x2260x2500	1200/1900	1280	3,05
AT 50 oval iPS	7,50	3,00	21,4	5660x2260x2500	1200/1900	1420	3,05
AT 75 oval iPS	11,30	4,50	23,0	5960x2260x2500	1200/1900	1530	3,32
AT 100 oval iPS	15,00	6,00	27,9	7110x2260x2500	1200/1900	1850	3,32
AT 125 oval iPS	18,80	7,50	34,4	8560x2260x2500	1200/1900	2150	3,50
AT 150 oval iPS	22,50	9,00	39,8	9760x2260x2500	1200/1900	2270	3,68
AT 175 oval iPS	26,30	10,50	45,2	10960x2260x2500	1200/1900	2480	3,68
AT 200 oval iPS	30,00	12,00	49,9	12000x2260x2500	1200/1900	2640	3,95
AT 225 oval iPS	33,80	13,50	55,0	13360x2260x2500	1200/1900	2890	3,95

* with 2 pcs. of Grundfos SEG.40.09.2.1.502 pump

Installation of WWTP types AT 30 - AT 225 oval iPS

Are installed into the prepared hole as underground tanks on a concrete slab with a thickness of about 300 mm so that the top edge of the revision manholes overlaps about 50 mm above the terrain. **Wastewater treatment plant is reinforced, without the need of putting concrete around.**



integrated pumping station

truck or container transport

plug and play installation

reinforced design backfill with sorted material

setup and control of pumps

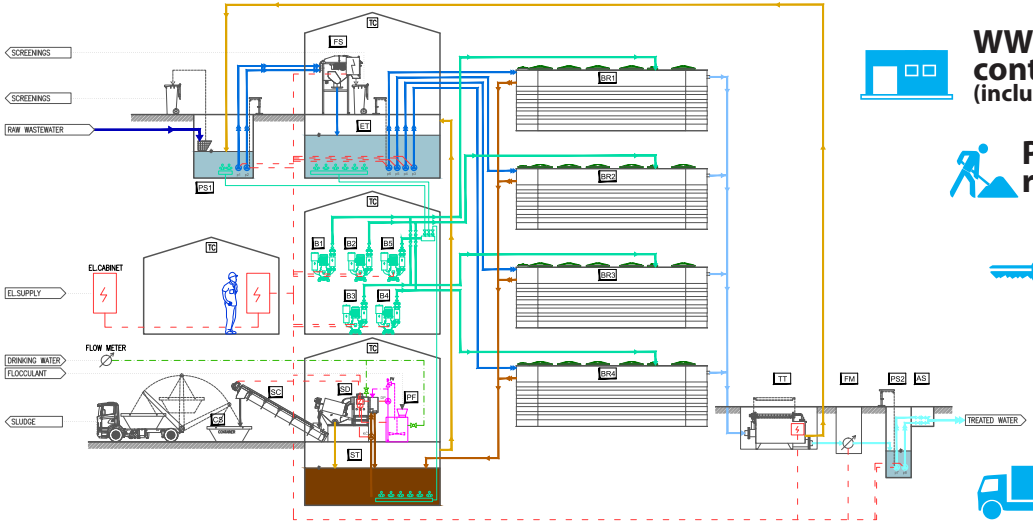
stainless steel locking system

membrane blowers

Larger wastewater treatment plants - AT 300 to AT 2000 oval MAXI

Wastewater treatment plants AT 300 to AT 2000 oval MAXI are designed for centralized wastewater treatment solutions in municipalities up to 2000 PE. Capacitively suitable for sewage sources from 45 to 300 m3 / day. They are supplied as a complete technological line supplemented by a pumping station with mechanical pre-treatment, homogenization tank, sludge management and a complete technical infrastructure. The parallel connection of individual biological reactors ensures the possibility of staged construction.

They are used for the treatment of sewage and municipal wastewater from municipalities up to 2000 PE.



CONNECTION CAPTION

- Raw wastewater
- Mechanically pretreated wastewater
- Biologically treated wastewater
- Tertiary treated wastewater
- Supernatant
- Excess sludge
- Thickened sludge
- Dewatered sludge
- Pressurized air
- Water
- Electrical wiring

PS1 - Pumping station with coarse mechanical pretreatment
P1,P2 - Submersible sludge pumps for PS1
TC - Technological container with operating room
FS - Fine screenings
ET - Egalization tank
P3,P4,P5,P6 - Submersible sludge pumps in egalization tank
BR1-BR4 - Biological reactors AT oval maxi
TT - Tertiary treatment
FM - Wastewater flow meter shaft
PS2 - Pumping station for treated water
P7,P8 - Submersible sludge pumps for PS2
AS - Armature shaft for PS2
ST - Sludge tank
SP - Sludge pump for dewatering
SD - Sludge dewatering
SC - Sludge conveyor
CS - Container of dewatered sludge
PF - Flocculant preparation and storage tank
DP - Dosing pump of flocculant
B1-B5 - Vertical roots blowers

WWTPs are prefabricated, containerized
(including operating building)

Possibility of staged realization of the work

Complete technical infrastructure

Mechanical pre-treatment

Standard freight vehicles transport

400 V electrical connection for WWTP

Type	PE	Daily inflow	Designed load	No. of biological reactors	Dimension of biological reactor			Usable volume of reactors
					Length	Width	Height	
	[PE]	[m^3/d]	[kg BOD_5/d]	[pc]	[mm]	[mm]	[mm]	[m^3]
AT300 oval MAXI	300	45,0	18,0	1	9660	3000	3400	76,1
AT400 oval MAXI	400	60,0	24,0	1	11660	3000	3400	91,1
AT500 oval MAXI	500	75,0	30,0	1	13660	3000	3400	109,8
AT600 oval MAXI	600	90,0	36,0	2	9660	3000	3400	152,2
AT800 oval MAXI	800	120,0	48,0	2	11660	3000	3400	182,2
AT1000 oval MAXI	1000	150,0	60,0	2	13660	3000	3400	219,5
AT1200 oval MAXI	1200	180,0	72,0	3	11660	3000	3400	273,3
AT1500 oval MAXI	1500	225,0	90,0	3	13660	3000	3400	329,3
AT2000 oval MAXI	2000	300,0	120,0	4	13660	3000	3400	439,0

Type	Total dimensions		Total surface area	Power input	El. consumption		Sludge production	
	Length	Width						
	[m]	[m]	[m^2]	[kW]	[kWh.d^{-1}]	[kWh.$year^{-1}$]	[% dry mass]	[m^3.$year^{-1}$]
AT300 oval MAXI	29	18,5	537	24,56	130	47623	15	11,0
AT400 oval MAXI	31	18,5	574	27,56	192	69915	15	14,6
AT500 oval MAXI	33	18,5	611	27,56	199	72543	15	18,3
AT600 oval MAXI	29	18,5	537	26,76	179	65470	15	21,9
AT800 oval MAXI	31	18,5	574	31,78	269	98040	15	29,2
AT1000 oval MAXI	33	18,5	611	31,98	276	100668	15	38,7
AT1200 oval MAXI	31	18,5	574	37,08	374	136486	15	43,8
AT1500 oval MAXI	33	18,5	611	38,68	392	142900	15	55,5
AT2000 oval MAXI	33	18,5	611	43,78	533	194577	15	73,7

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 the 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 our 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 the 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 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 [m^3]	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 tank is placed on the compacted sub-base 25 cm thick including overlapping the footprint of the tank by 20 cm. In 30 cm layers 4/8 gravel is used for backfilling the tank and make up the sub-base.

TYPE	Volume [m^3]	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

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 placed 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 in the entire distribution is the installation of the water meter at the base of the shaft which prevents it from freezing.

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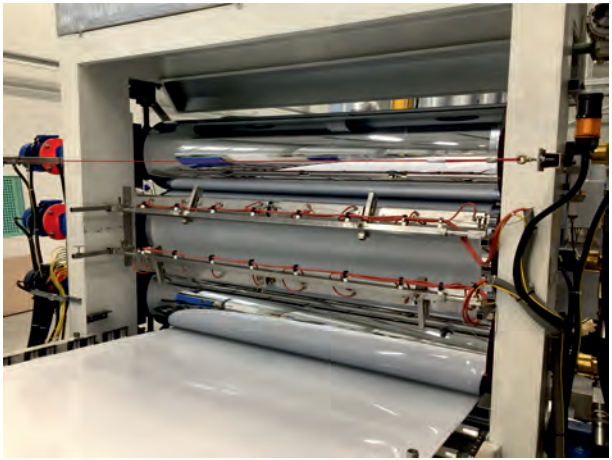
TYPE	Diameter [mm]	Height [mm]	Manhole [mm]
VS 1,4	1100	1500	600 (excentric)

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.

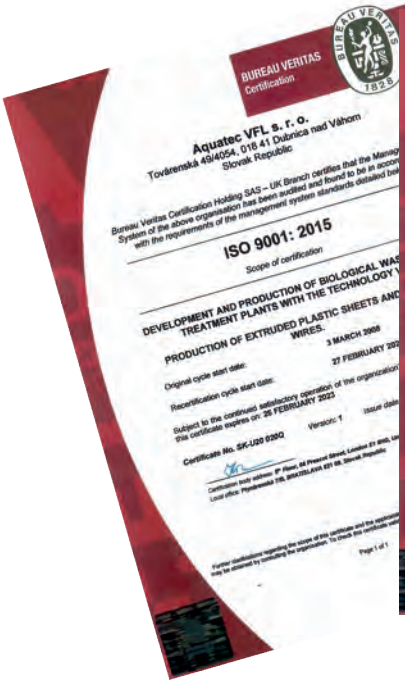


The goal of setting up extrusion line was mainly to cover the internal consumption of PP plastic sheets which we need for the production of wastewater treatment plants. Later we launched the commercial sale of PP plastic sheets with the width of max. 2000 mm, thickness of 3 to 20 mm and length regarding the client needs.

The combination of modern technologies, many years of know-how in the field of plastic extrusion and long-standing know-how in processing of PP sheets allows us to guarantee 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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VFL®

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

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

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

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

Elmar Lamot June 2006

CE

VFL®

Partner Companies

AQUATEC®

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

19A98 AUGUST

Vilnius, Lithuania
- production of WWTP
- complete service

... because water is life ...

Wastewater Treatment Plants References

Algeria
Austria
Belarus
Bulgaria
China
Colombia
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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Photo Gallery

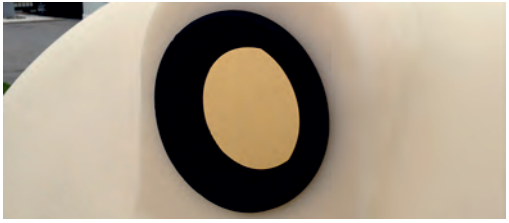
Residential Wastewater Treatment Plants

Photo Gallery

Oval Wastewater Treatment Plants

Photo Gallery

Underground Plastic Tanks, Watermeter Shaft



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

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