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*

... 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.

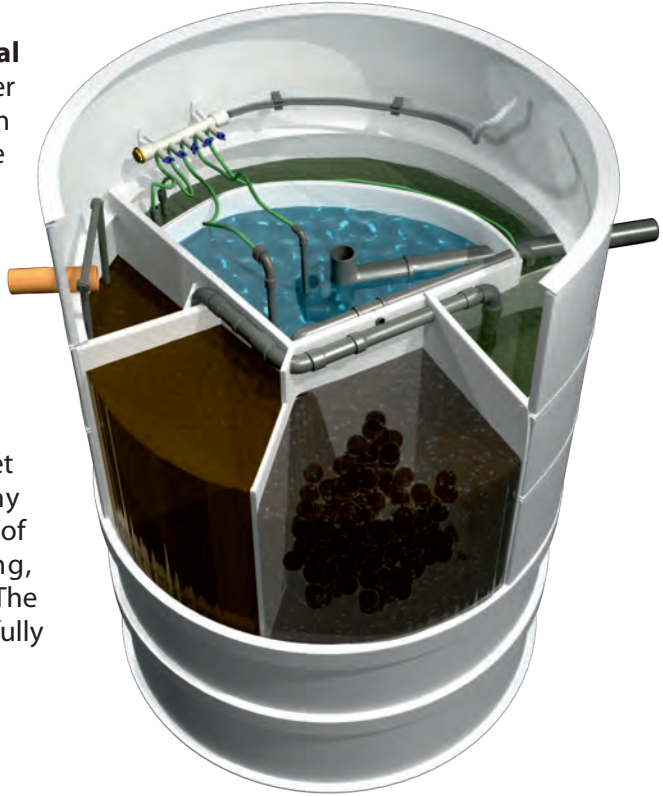
... because water is life ...

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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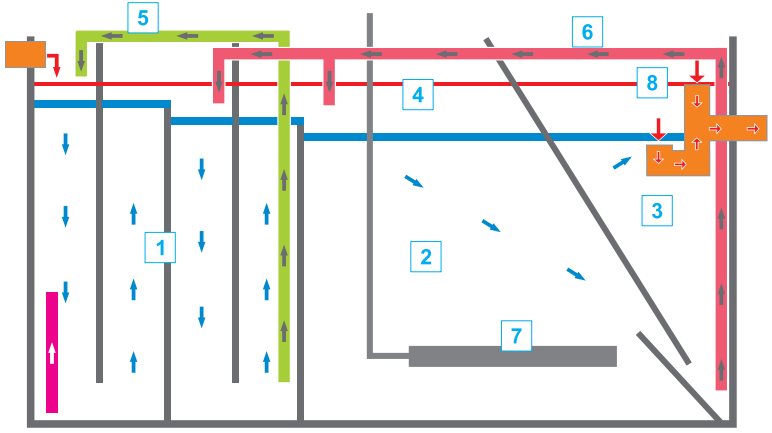
Vertical Flow Labyrinth – VFL® - Treatment process

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.



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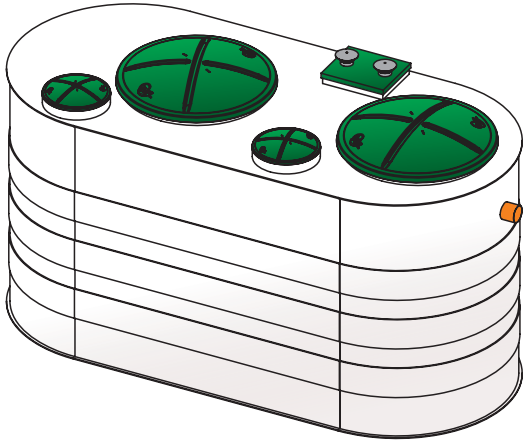
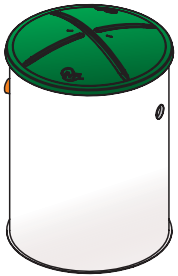
1 – Anaerobic and anoxic zones with „Vertical Flow Labyrinth“
2 – Oxic chamber
3 – Final clarification chamber
4 – Integrated retention chamber
5 – Internal recirculation
6 – Recirculation of sludge
7 – Fine-bubble diffusor
8 – Flow regulator

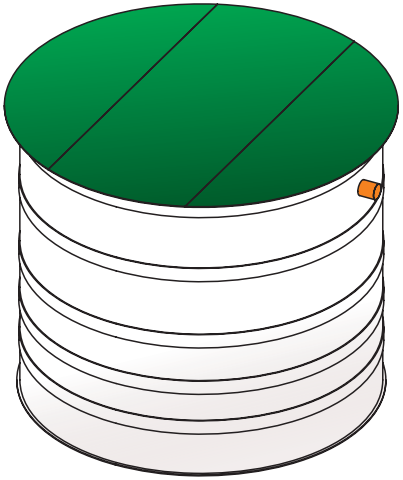
Furthermore, the wastewater flows gravitationally into the aerated low-activation chamber where, in the presence of oxygen, biological degradation of organic pollution occurs and nitrification of ammoniacal nitrogen. Pressurized air is injected into the aerated space through fine aerobic aeration elements.

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.

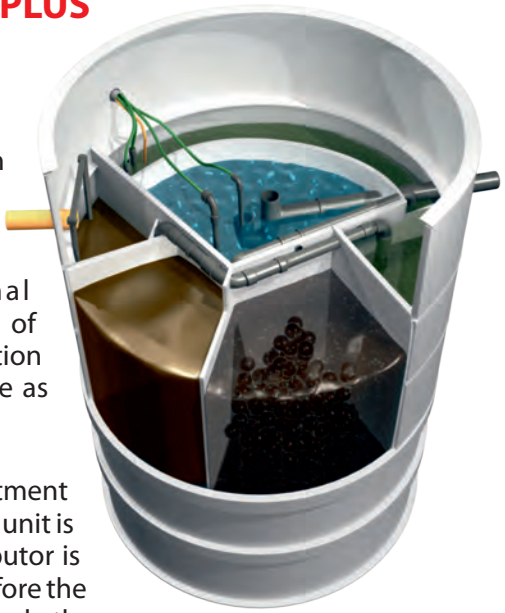
The compressed air supplied by the blowers is controlled by the AQC Basic microprocessor control unit, which can be operated in different modes depending on the load. In this case, the intensive operation, when the compressed air flows into the aeration circuit and simultaneously into the overflow circuit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

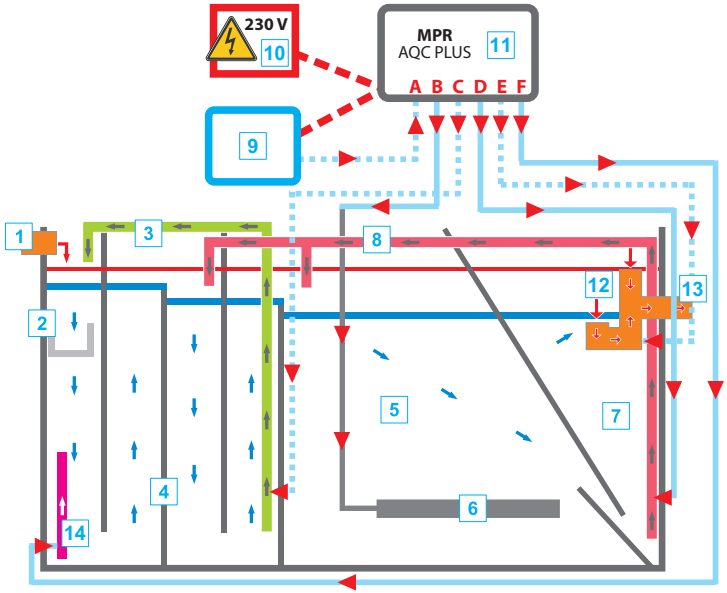
PLUS is a high-grade wastewater treatment plant designation, the AQC PLUS control unit is used to control the plant. The air distributor is located directly in the control unit, therefore the control unit electronically controls not only the operating modes but also the air flow into the individual circuits.

AQUATEC ®

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 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 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 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 including the GSM control for WWTP.**

PIA Prüfinstitut für Abwassertechnik GmbH

GSM control

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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.**

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

Obtaining the **Certificate of ISO 9001 and ISO 14001 for extrusion production.**

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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, waste water 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 15 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 Waste Water Technology in Aachen, Germany

Remote control of WWTP

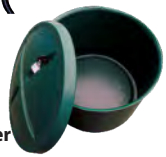
High quality and verified technology

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 / ---	2,70	1,08	6,7	2050/2700	2200/2000/DN150	405	150/---

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 15 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

The range of oval wastewater treatment plants from **AT30 oval to AT225 oval** 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 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 gradually **expanded up to the capacity of 135 cubic meters per day (900PE)** by installing several units in parallel.

AT 30 oval to AT 225 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

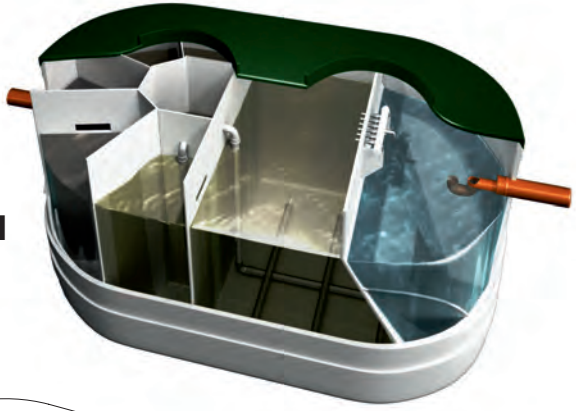
230 V electrical connection

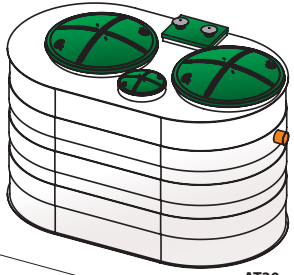
self-supporting design backfill with sorted material

truck or container transport

stainless steel locking system

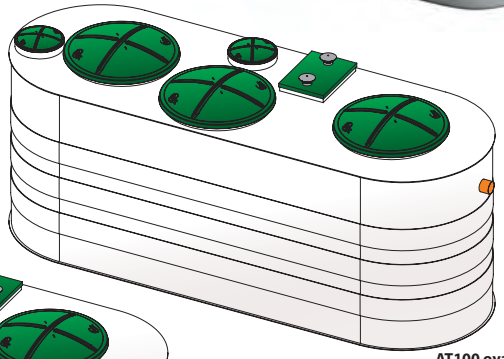
GSM control Remote control of WWTP





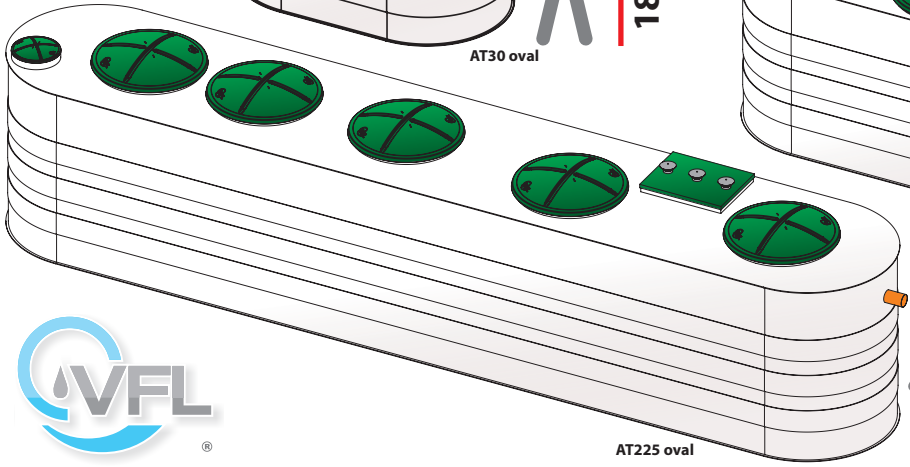
180 cm

AT30 oval



180 cm

AT100 oval



180 cm

AT225 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	3720x2210x2250	1700/1500	750	0,23
AT 40 oval	6,00	2,40	15,00	4660x2210x2250	1700/1500	850	0,23
AT 50 oval	7,50	3,00	19,50	4850x2210x2500	2200/1900	940	0,36
AT 75 oval	11,30	4,50	19,80	5160x2210x2500	2200/1900	1040	0,46
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	0,90
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

AQC BASIC control unit with GSM module

membrane blower

Installation of wastewater treatment plant types AT 30 oval - AT 225 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 self-supporting, 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.

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Circular Wastewater Treatment Plants

The range of circular wastewater treatment plants from **AT30 to AT300** is designed for decentralized and semi-centralized solutions of wastewater treatment in the range of **3,8 up to 45,0 cubic meters per day (30PE-300PE)**. Supplied separately or as a complete technological line extended with a pumping station with mechanical pre-treatment and sludge tank.
The wastewater treatment systems comprised of the biological reactors from AT30 to AT300 can be gradually **expanded up to the capacity of 135 cubic meters per day (900PE)** by installing several units in parallel.

AT 30 to AT 900 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, meat processing factories, dairy factories and slaughterhouses. **Furthermore the purified water can either discharge into the surface or underground water, respectively it can be reused for irrigation.**

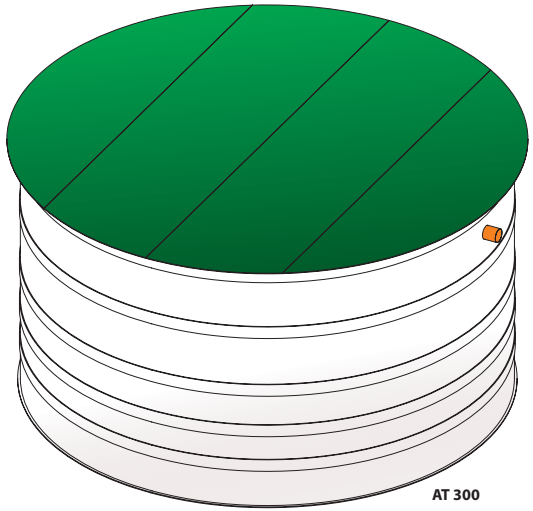
230 / 400 V
electrical connection

partly underground tank
backfill with sorted material

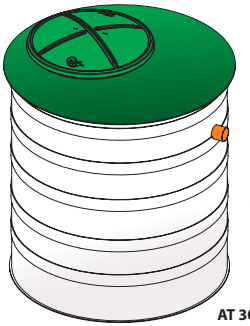
stainless steel
locking system

GSM control Remote control
of WWTP

AQUATEC®



AT 300



AT 30

180 cm

180 cm

VFL®

Installation of wastewater treatment plant types AT 30 - AT 300

AT30 - 300 biological reactor and the sludge tank are installed as partly underground tanks on the concrete base slab (thickness 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 put a concrete around.
Before doing backfill (sorted material or concrete) the tank must be filled with water up to the outflow pipe.

WWTP Type	Designed daily flow [m^3/day]	Designed daily load [kg BOD_5/day]	Usable volume [m^3]	Diameter x Height of tank [mm]	Height inflow/outflow [mm]	Weight [kg]	Power input [kW]	Voltage [V]
AT 30	3,80	1,50	10,40	2400x2700	2200/2000	490	0,23	230
AT 40	5,30	2,10	14,70	2850x2700	2200/2000	630	0,23	230
AT 50	7,50	3,00	20,40	2950x3000	2800/2600	760	0,55	400
AT 75	11,30	4,50	22,80	3300x3000	2880/2690	1120	0,75	400
AT 100	15,00	6,00	26,50	3500x3000	2880/2690	1280	0,75	400
AT 120	18,00	7,20	34,50	4000x3000	2880/2690	1450	0,75	400
AT 150	22,50	9,00	43,70	4500x3000	2880/2690	1720	1,50	400
AT 200	30,00	12,00	53,90	5000x3000	2880/2690	2000	1,50	400
AT 250	37,50	15,00	60,60	5300x3000	2880/2690	2150	1,50	400
AT 300	45,00	18,00	65,90	5500x3000	2880/2690	2300	1,50	400

roots blower

membrane blower

AQC PRO control unit

AQC BASIC control unit

AQUATEC®

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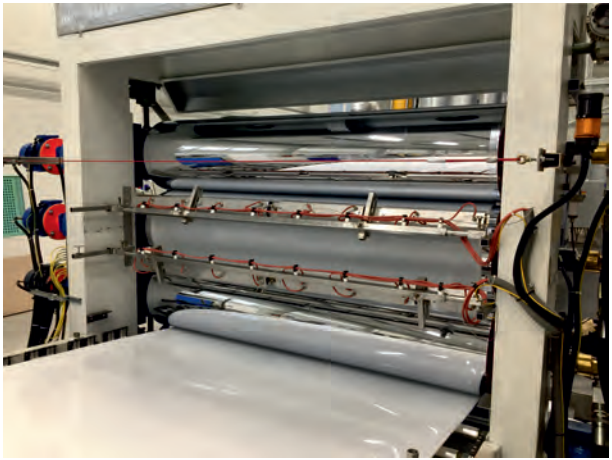
TYPE	Diameter [mm]	Height [mm]	Manhole [mm]
VS 1,4	1100	1500	600 (excentric)

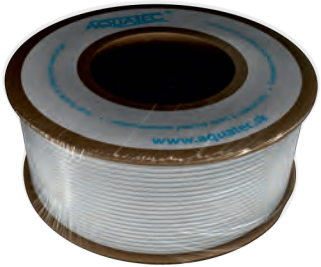
Polypropylene plastic sheet extrusion

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 sheets.
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

BUREAU VERITAS
Certification

Aquatec VFL s. r. o.

Továrenská 49/4054, 018 41 Dubnica nad Váhom
Slovak Republic

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015

Scope of certification

DEVELOPMENT AND PRODUCTION OF BIOLOGICAL WASTEWATER TREATMENT PLANTS WITH THE TECHNOLOGY VFL

Original cycle start date: 03.03.2008

Recertification cycle start date: 28.02.2017

Subject to the continued satisfactory operation of the organization's Management Syste
this certificate expires on: 27.02.2020

Certificate No: SK-U 17 012 E Version: 1 Revision date: 28.02.2017

BUREAU VERITAS
Certification

Aquatec VFL s. r. o.

Továrenská 49/4054, 018 41 Dubnica nad Váhom
Slovak Republic

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

DEVELOPMENT AND PRODUCTION OF BIOLOGICAL WASTEWATER TREATMENT PLANTS WITH THE TECHNOLOGY VFL

Original cycle start date: 03.03.2008

Recertification cycle start date: 28.02.2017

Subject to the continued satisfactory operation
this certificate expires on: 27.02.2020

Certificate No: SK-U 17 014Q Version: 1

Allgemeine bauaufsichtliche Zulassung

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 6 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.

DIBt

4 janvier 2012 JOURNAL OFFICIEL DE LA RÉPUBLIQUE FRANÇAISE Texte 86 sur 105

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
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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 : 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
Raison 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
août de traitement	6 équivalents/habitants

Références de l'évaluation de l'installation

sme 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 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

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Bulgaria
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France
Germany
Hungary
Italy
Latvia
Lithuania
Mexico
Morocco
Poland
Romania
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Slovenia
Spain
Sweden
Switzerland
Syria
Tunisia
Ukraine

AQUATEC®

AUGUST

Photo Gallery

Residential Wastewater Treatment Plants

Photo Gallery

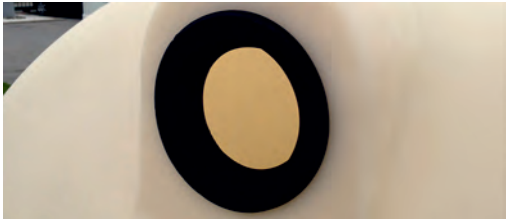
Oval and Circular Wastewater Treatment Plants

Photo Gallery

Large 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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