

Environmentally friendly water treatment technologies



For industry and municipalities



### Introduction

Hidrofilt Group has been carrying out its activities in the fields of industrial water treatment, drinking water and industrial wastewater treatment since 1990.

## From idea to implementation

Building on quality, environmental protection and operational safety, it holds itself to a high standard of service when it comes to the design, manufacturing, installation, commissioning, maintenance, servicing, remote monitoring, operation, spare parts and chemical supply of water treatment systems.

# General contracting - Technology delivery

Being an EPC contractor for complete and turnkey project implementation or a technology supplier for the delivery of water treatment systems, we are always striving for the quick and professional satisfaction of customer needs.

### **Innovation**

With the innovative use of our extensive technological background, we offer high-quality solutions for the most diverse water treatment tasks. We are in the possession of valuable references in several areas such as in the industry, services, agriculture and R&D sectors.

## International experience

In Hungary, the headquarters and production plant of Hidrofilt Ltd. are located in Nagykanizsa, whereas its regional office and service center are based in Érd. In order to support its export activities, sister companies were established in Slovakia, Romania and Poland. Hidrofilt Ltd. is a founding member of the Hungarian Water Technology Corporation Ltd. As a regional market leader in the manufacturing of water treatment technologies, the company has gained significant international experience over the past decades. Its products can be found throughout Europe, Asia, Africa and Central and South America.

# Long-term partnerships

Being a privately owned business, Hidrofilt Group has the capability of rapid decision-making and flexible optimization of its resources. It aims to maintain a strong and long-term trust-based relationship with its customers and partners in which all parties can mutually enjoy the advantages of the cooperation.





"We are building a world, where all human and living beings have access to healthy drinking water and where all industrial companies recycle and reuse their wastewater."

**Borsos Ferenc - founder of Hidrofilt Group** 



# **SINCE** 1990

> 30 years of experience



> 6200 m<sup>2</sup> production area



100% private company



100% solar energy fueled production



> 4000 references in 35 countries



> 100 monitored systems



> 160 employees





> 200 containerized water treatment systems

# **Environmentally friendly** water treatment technologies

In the course of its activities, Hidrofilt Group actively contributes to the economical and environmentally friendly use of our natural resources, in particular water sources, paying special attention to the preservation of their original state. During the design and implementation of its water treatment systems, the Group strives for:

- · energy efficiency
- · exploiting water recycling possibilities
- the recycling of built-in materials according to the principles of a circular economy
- applying "Plant Lifecycle" management to increase system lifespan
- · the use of biodegradable chemicals
- the use of natural absorbents
- environmentally friendly implementation and operation

## Together for our future...





# **Products**







## **Membrane separation systems**

Reverse osmosis desalination /RO, DPRO, SWRO, STRO/ Nanofiltration /NF/ Ultrafiltration /UF/ Microfiltration /MF/ Membrane degassing equipment /MC/ Electrodeionization equipment /CEDI/ Membrane bioreactors /MBR/ Membrane cleaning systems /CIP/ Electrodialysis systems /ED, EDR/ Advanced membrane technology /FO/ FO/

# Ion exchange systems

Softeners /SAC/
Carbonate removers /WAC/
Complete desalination /SAC, SBA/
Mixed-bed desalination /MX/
Condensate treatment systems
Organic scavenger resins
Selective ion exchangers, heavy metal removers
Nitrate, boron and fluoride content reduction

# **Industrial media filtration systems**

Gravitational and pressurized multimedia filters /RGF, MMF/ Activated carbon filters /CF/ Iron and manganese removal /AMF/ Arsenic removal Coagulation filters /Hidrobead/





### **Pre- and post-treatment**

Chemical dosing stations, polyelectrolyte dissolving and dosing systems Clarifiers, homogenizers, settlers, plate settlers

Multi-chamber reactors with inert material aid /IBS/

Dissolved air flotation /DAF/

Oil separators

Neutralizing systems

Plastic storage and buffer tanks for storing corrosive hazardous chemicals Gas scrubbers, degassers /DG/, vacuum degassers

Pressurized and gravitational stainless steel tanks

Stainless steel filter housings for bag, candle and cross flow filtration

Evaporators, vacuum evaporators



Gravitational thickeners Dewatering equipment Filter presses Centrifuges

# **Disinfection systems**

Chlorine gas, chlorine dioxide, hypochlorite feed stations, electro-chlorinators Ozone generators

UV disinfection equipment

Chemical and thermal sanitation equipment

### Chemicals

Oxidizing agents

Reducing agents

Flocculants and coagulants

Biocides

Antiscalants

Inhibitors

Conditioners for heating systems, boilers, steam generators

Conditioners for closed and open cooling systems





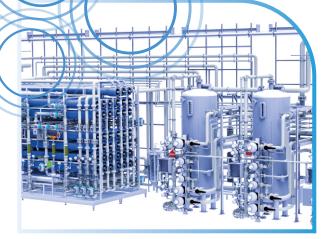








# All services under one roof











### Project management

Expertise - Professionalism - Integrity

Technology provision General contracting Project implementation according to FIDIC contracts



### Design

Creativity - Precision - Innovation

Complete construction, technological, mechanical, electrical and control engineering design.

- Licensing
- Production plans
- Construction plans



### Production

Efficiency - Quality - Customized

Manufacturing of customized treatment technologies and containerized mobile water treatment systems.

- · Stainless steel workshop with electropolishing
- · Equipment assembly plant
- · Plastic tank manufacturing and cutting workshop
- · Electrical assembly workshop



## **Project implementation** and commissioning

Flexibility - Professionalism - Security

Delivery, installation, testing and optimization of the various equipment making up the water treatment technology Operator training



# HidroWell mobile water treatment systems

Compact - Mobile - Modular

Water treatment systems in standard containers with quick set-up and easy transport, specifically designed for different fields of application.





### Operation and maintenance

Speed - Experience - Reliability

Low operating cost, long lifespan

Maintenance and service, 24-hour availability



# Remote surveillance and monitoring system

Performance - Energy efficiency - Information

HIS /Hidrofilt Information System Online monitoring and data analysis Remote monitoring system Adaptive maintenance control



### Spare parts and chemical supply

Speed - Cost efficiency - High Standards

Warehouse supply of:

- Membranes
- Filters
- Spare parts
- Chemicals



### Research and development

Sustainability - Environment - Innovation

Accredited laboratory measurements, quick water analyses Membrane, resin and filter tests
Technology and product development
Technology testing with pilot equipment
Consulting and feasibility studies
Vocational training



### Quality management

 $Integrated-Versatile-Committed\ to$ 

ISO 9001, ISO 14001, ISO 45001 VCA/SCC\*\* Workplace and occupational safety Accredited laboratory according to ISO/IEC 17025 Plastic and metal welding according to the ISO 3834 EN 10204 3.1. standard











# Oil, gas and chemical industry







Production of fine-desalinated technological water

Water purification and water preparation for power systems /boilers, turbines, cooling systems/

Desalination technologies for hydrogen production

Mobile water treatment systems for EOR application

Purification and filtration of acids, bases, viscous solutions

Implementation of a treatment system for the production of desalinated process water and boiler feed water from river water for the chemical industry.

BorsodChem Plc. / Hungary 900 m³/h UF + 500 m³/h RO 250 m³/h RO + 215 m³/h CEDI 900 m³/h UF | 750 m³/h RO | 337 m³/h CEDI

Complete implementation of a treatment system for the production of fine-desalinated process water from the Danube river for the oil industry.

Slovnaft A.S. CHUV II-III. / Slovakia Slovnaft A.S. CHUV II.-III. / Slovak Republic 750 m³/h UF | 600 m³/h RO 840 m³/h MX



Complete implementation of a treatment system for the production of fine-desalinated process water for the production of polysterene.

Dunastyr Zrt. / Hungary

40 m³/h SAC/SBA

dunastyr

Complete implementation of a treatment system for the production of fine-desalinated process water from the Danube river for oil refinery and hydrogen production purposes.

MOL Plc. Százhalombatta / Hungary installed into 14 pcs of 40' standard containers

200 m³/h UF | 520 m³/h RO 320 m³/h MC | 200 m³/h MX







Production of fine desalinated water from surface water using containerized technology for a chemical plant.

MOL Plc. / Polyol Plant / Hungary 12 pcs 40' standard container 336 m³/h UF 282 + 234 m³/h RO 217 m³/h CEDI



Complete implementation of a water treatment system for the production of fine-desalinated water from surface water for the production of raw materials for rubber.

JSR MOL Synthetic Rubber Zrt. / Hungary 258 m³/h DAF | 162 m³/h UF 66 + 48 m³/h RO | 40 m³/h MC



Fine-desalinated process water system for tire manufacturing. Apollo Tyres Ltd. / Hungary  $2 \times 30 \text{ m}^3\text{/h} DPRO$ 

Fine-desalinated process water system for tire manufacturing.

Hankook Tire Hungary Ltd. / Hungary

135 m³/h MMF / RO

Complete implementation of a water treatment system for the production of partially desalinated process water from pretreated surface water, using EDR technology.

PCC Rokita S.A. / Poland 127 m³/h EDR



Dimethylformamide filtration with membrane technology for the production of carbon fibre.

Zoltek Plc. / Mexico 10 m³/h Zoltek Plc. Toray Group / Hungary 10 m³/h



Lime sludge thickening system with sludge pressing for chemical plant. Anwill Group / Poland











# **Energy sector**







Demineralized water production for power plants:

Demi water

- Specific electrical conductivity: < 0,2 μS/cm</li>
- TOC: < 200 μg/l

Water treatment for heating systems: turbines, boilers, cooling and air conditioning systems

Geothermal energy use with desalination

Treatment of high-temperature wastewaters and condensates

High capacity chlorine dioxide disinfection systems for cooling towers

Installation of a system for the production of fine-desalinated water from the Danube river for nuclear power plant use. MVM Paks Nuclear Power Plant Plc. / Hungary 400 m<sup>3</sup>/h UF 360 m<sup>3</sup>/h RO 250 m³/h CEDI



Complete implementation of a water purification plant, treating surface water to produce technological water for power plant use. Tauron Wytwarzanie S.A. / Poland 2 x 80 m<sup>3</sup>/h IBS / RGF / UF 200 m<sup>3</sup>/h IBS / RGF / UF / DPRO / EDI



Complete implementation of a water purification plant, treating well water to produce technological water for power plant use. Veolia Energy Hungary Plc. / Hungary

2 x 5,5 m<sup>3</sup>/h RO / EDI / MC







Complete implementation of a water treatment plant for the production of fine desalinated water from pre-treated surface water for power plant use.

PGE Górnictwo I Energetyka S.A. / Poland  $3 \times 30 \text{ m}^3/\text{h} DPRO / UV / MX$ 



Design and manufacturing of a water treatment system for the production of process water from pre-treated seawater. Alpha Utilities LLC / United Arab Emirates 20 m³/h MMF / DPRO / CEDI 25 m³/h RO / CEDI



Complete implementation of fine-desalinated technological water production system.

Kazatomprom Plc. / Kazakhstan 16 m³/h RO / CEDI



Production of makeup water with conditioning chemical dosing for district heating utility company using well-water and condensate water.

Széphő Plc. / Hungary

 $6 \times 2,5 \text{ m}^3\text{/h}$  degassing / AMF / CF / DPRO / MC





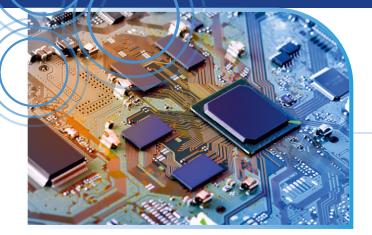








# **Electronics and pharmaceutical industry**







Complete implementation of water treatment systems for the electronics industry based on SEMI PV3 and ASTM D5127 standards:

- · Ultrapure water
- · High-purity water

Water treatment for humidifier systems

Technological water and wastewater treatment for the production of copper foil.

Production of demi water and highly-purified water from drinking water and purified wastewater for the microelectronics industry.

Complete implementation of the water treatment system.

Ecosolifer Ltd. / Hungary 12 m³/h demi water

12 m³/h high-purity water

Complete implementation of a treatment system for the production of ultrapure water from well water for the electronics industry.

Samsung Engineering Hungary Ltd. / Hungary 254 m³ /h MMF + 162 m³/h CF / RO + 54 m³/h RO / CEDI 60 m³/h MMF + RO + CEDI

Technological water and industrial wastewater treatment for copper foil production.

Doosan Hungary Ltd. / Hungary
Technological water treatment
90 m³/h DPRO / CEDI + x m³/h MMF / RO
Industrial wastewater treatment
50 m³/h chemical treatment / UF / DPRO / evaporation

Complex water treatment from pre-treated Danube water for the manufacturing of rechargeable battery parts. Treatment of cooling-cycle makeup water, boiler feed water and technological water.

Toray Industries Hungary Ltd. / Hungary 40 m³/h MMF / SAC 32 m³/h RO /SAC







Complete implementation of high-quality and high-purity water treatment systems for the pharmaceutical industry based on USP and EP standards.

- · Purified water
- · Highly purified water
- · Water for injection

Design, manufacturing and on-site installation of a water treatment system for the production of pharmacopeial, PW and HPW grade purified water from potable water. FAT, SAT IQ/OQ testing and commissioning.

Richter Gedeon Plc. / Hungary, Romania 2 x 30 m³/h RO / CEDI RO+CEDI Budapest 3 x 6 m³/h DPRO / CEDI DPO+CEDI Dorog 2 x 5 m³/h DPRO / CEDI DPRO+CEDI Târgu Mureș



RICHTER GEDEON

Pharmacopeial quality HPW grade purified water treatment systems with sanitation system.

Becton & Dickinson Plc. / Hungary  $2 \times 4 \text{ m}^3/\text{h}$  RO / CEDI





Pharmacopeial quality HPW grade purified water treatment system.

Béres Gyógyszergyár Plc. / Hungary 1,5 m³/h DPRO



Pharmacopeial quality PW and HPW grade purified water treatment systems with sanitation system.

Human Bioplazma Ltd. / Hungary 8 m³/h DPRO - PW 8 m³/h DPRO / EDI / UF - HPW













# Purifying and reusing industrial wastewater



Concentrate treatment

Leachate treatment

Treatment of wastewaters containing high concentration of heavy metals, oil, paint, ammonia and organic solvents

Industrial wastewater treatment and recycling /ZLD and MLD technologies/ Wastewater treatment for glass production and surface coating plants Soil remediation



Treatment of contaminated soil, caused by the operation of a tannery with mobile, containerized soil remediation technology. Application of complex technological and media filtration, membrane separation and ion-exchange technology. Hungary/ Simontornya 400 m³/day

Treatment of leachate water from fermented communal wastewater sludge with forward osmosis (FO) and reverse osmosis (RO) technology. UTB Envirotec Plc. / Hungary



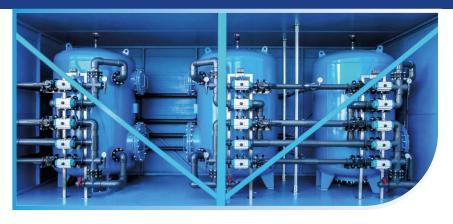
ZLD-type treatment of glass factory wastewater with water recycling. Guardian Orosháza Ltd. / Hungary 440 m³/day

LTD Low-temperature distillation Doosan Hungary Plc. / Hungary





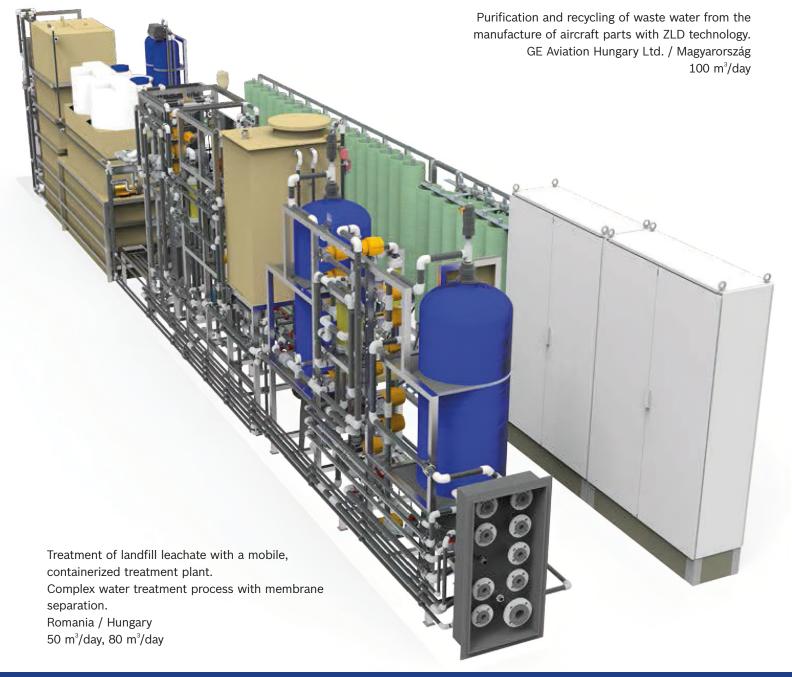




Design, production and installation of a containerized, mobile wastewater purification plant for the treatment of wastewaters from galvanizing processes.

Sil Stich Industrie-Lackierung Gmbh. / Germany





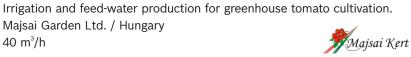
# **Agriculture and food industry**



Treatment of irrigation water, removal of sodium, desalination Water treatment for aquaculture-based gardens and farms Treatment of drinking water for animals Water treatment for the production of pet food



Irrigation and feed-water production for greenhouse tomato cultivation. Greencoop Group / Slovakia 30 m<sup>3</sup>/h



Irrigation and feed-water production for greenhouse tomato cultivation. Farma Ráječek / Czech Republic farma Ráječek

Production of desalinated water and boiler feed water treatment in pet food production. Piko-Pet Food Ltd. / Hungary



Water treatment system for iron, manganese and ammonia removal from well water for aroma production.

Givaudan Hungary Ltd. / Hungary 58 m<sup>3</sup>/h

Complex water treatment using surface water for starch production. Treatment of cooling-cycle makeup water, boiler feed water and technological water.

Viresol Ltd / Hungary 100 m<sup>3</sup>/h

16 m<sup>3</sup>/h

20 m<sup>3</sup>/h







Process and product water treatment, waste water treatment for the food industry:

- Dairy industry
- · Mineral water and soft drink production
- · Spirits and brewing industry
- · Vegetable oil and aroma production
- · Slaughterhouses and meat processing plants

Steam production for food industry

Food technology solutions:

- Juice thickening using membrane technology
- · Removing color from sugar syrup

Cleaning and recycling of technological wastewater

Product and technological water for the pasteurization process during the production of energy drinks.

Hell Energy Hungary Ltd. / Hungary 365 m<sup>3</sup>/h



Product and technological water for the pasteurization process during beer production.

Dreher Breweries Plc. / Hungary 100 m<sup>3</sup>/h



Production of technological water with ultrafiltration for the food canning industry.

Globus Cannery Plc. / Hungary 150 m<sup>3</sup>/h



Treatment of well water and implementation of technological desalination systems for animal farms, slaughterhouses and meat processing plants.

Bonafarm Group / Hungary 182 m<sup>3</sup>/h



Provision of food industry grade desalinated water from well-water for canning processes.

Univer Product Plc. / Hungary 40 m³/h AMF / RO







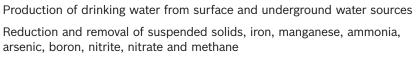






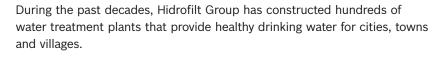
# **Drinking water treatment**





Seawater and brackish water desalination

Swimming pool and thermal water treatment with ultrafiltration technology





Removal of suspended solids from well water and application of ultrafiltration system for safety reasons at Miskolc Waterworks. Mivíz Waterworks Ltd. / Hungary 33 000  $\rm m^3/day~UF$ 

Degassing of well water, removal of suspended solids, iron, manganese and biological ammonia with the application of ultrafiltration technology in Zalaegerszeg Waterworks.

Zalavíz Waterworks Plc. / Hungary 4 500 + 15 000 m³/day UF









Rehabilitation of Labugama and Kalatuwawa Water Treatment Plants: removal of suspended solids, iron, manganese, ammonia and color from the reservoir water. Complete implementation of the technology, including the provision of continuous plant operation.

Water Board Sri Lanka / Sri Lanka 90 000 + 60 000 m³/day

Removal of suspended solids, iron, manganese and ammonia from well water in several communities.

DRV Waterworks Plc. / Hungary 30 118 + 4 080 + 270 m³/day AMF / CF

Removal of suspended solids, iron, manganese and ammonia from well water in several communities.

Vasivíz Waterworks Plc. / Hungary 2 272 + 719 + 625 + 252 + 248 m³/day

#### **DRINKING WATER WITH HIDROFILT TECHNOLOGY**







> 2.7 million people













# **HidroWell© mobile water treatment plants**



**Compact** Small footprint, optimal space utilization

Mobile Simple transportation, as the containers are standardized

for marine transport

Modula Capacity can be expanded by combining several containers

Fast Quick availability, applicable in crisis and disaster situations

Intelligent Fully instrumented, automated, integrated PLC,

remote monitoring system









**Economical** Directly from the supplier

Reliable Long product life ensured by premium quality

components.

**Efficient** Low energy consumption and operating costs

**Innovative** Alternative energy sources

/generator, solar panels/

**Versatile** Ability to extend with bottled or packaged

water production system

### HidroWell-A1 mobile drinking water treatment plants for surface water

Widely applicable mobile drinking water treatment units with ultrafiltration technology.

EU / Peru / Cuba / Ecuador 200 m<sup>3</sup>/day

### HidroWell-A2 mobile drinking water treatment plants for well water

Fully automated systems for reduction of iron, manganese,

arsenic and boron content.

More than 180 settlements / E 200 m<sup>3</sup>/day MMF / AMF / AS Kyrgyzstan, Iraq

200 m<sup>3</sup>/day MMF / RO





HydroWell-A3 mobile seawater desalination plants

Systems using ultrafiltration /UF/ and reversed osmosis /SWRO/ including an energy recovery system and remote

monitoring. Tunisia / EU 50 m<sup>3</sup>/day







#### **HidroWell Mini**

Pallet-sized, mobile water treatment system that can be transported by helicopter or speedboat. It can also be widely used in disaster situations. A combined system capable of producing drinking water from surface water, well water and seawater.

Office of Civil Defense (National Disaster Risk Reduction and Management Council) / Philippines Drinking water treatment capacity from sea water 50 m<sup>3</sup>/day MMF / UF / SWRO Drinking water treatment from well-water and surface water

100 m<sup>3</sup>/day MMF / UF





# International group at your service





### Hidrofilt chemical products

### Heating systems, boilers, steam generators

**HIDROKOND** conditioners

**HIDROSTREAM** steam and condensate conditioners

### Closed and open cooling systems

**HIDROCOOL** conditioners

### **Drinking water treatment and swimming pools**

**HIDROCID** biocides, algaecides

**HIDROXIDE** disinfectants

#### Membrane separation and pre-treatment

**HIDROTREAT** antisclants

**HIDROCLEAN** membrane cleaners

Flotation chemicals and deoilers

Flocculants and coagulants

Oxidants, reductants and neutralizing agents

#### Wastewater treatment

**HIDROSTOP** odor control

antifoam and defoamer chemicals

conservation

Dyes removal from wastewater

# Comprehensive service for efficient operation of water systems



• Chemical treatment with environmentally friendly products













- Regular inspections with a mobile laboratory and highly experienced professionals
- · Continuous monitoring and analysis with a self-developed monitoring system

Our partners, who have chosen Hidrofilt Group to maintain and operate their water treatment system during the past decades:







































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