

# HIDR FILT

*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**

**> 35 years of  
experience**



**100% private  
ownership**



**> 4000 references  
in 35 countries**



**> 190 employees  
> 80 engineers**



**> 11000 m<sup>2</sup>  
manufacturing hall**



**100% solar  
production**



**> 100 monitored  
systems**



**> 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/  
Forward osmosis systems /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

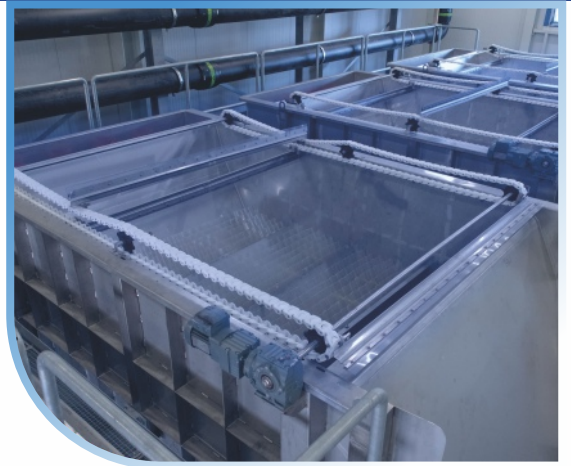
## Industrial media filtration systems

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



## Sludge treatment

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

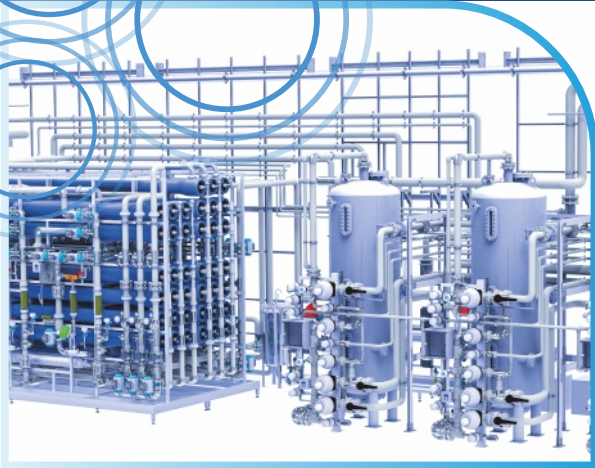


## Chemicals

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



ECO  
ENGINEERING

## Project management

Expertise - Professionalism – Integrity

Technology provision

General contracting

Project implementation according to FIDIC contracts



GREEN  
DESIGN

## Design

Creativity – Precision – Innovation

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

- Licensing
- Production plans
- Construction plans



ECO  
PRODUCTION

## 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



GREEN  
CONSTRUCTION

## Project implementation and commissioning

Flexibility – Professionalism – Security

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

Operator training



PLUG AND  
PUMP

## 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



ECO OPERATION

## Operation and maintenance

Speed – Experience – Reliability

Low operating cost, long lifespan  
Maintenance and service, 24-hour availability



GREEN MONITORING

## Remote surveillance and monitoring system

Performance – Energy efficiency – Information

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



ECO FRIENDLY CHEMICALS

## Spare parts and chemical supply

Speed - Cost efficiency - High Standards

Warehouse supply of:

- Membranes
- Filters
- Spare parts
- Chemicals



GREEN R+D

## 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



GREEN CONTROL

## 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 m<sup>3</sup>/h UF + 500 m<sup>3</sup>/h RO  
250 m<sup>3</sup>/h RO + 215 m<sup>3</sup>/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. / Slovak Republic  
750 m<sup>3</sup>/h UF | 600 m<sup>3</sup>/h RO  
840 m<sup>3</sup>/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 m<sup>3</sup>/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 m<sup>3</sup>/h UF | 520 m<sup>3</sup>/h RO  
320 m<sup>3</sup>/h MC | 200 m<sup>3</sup>/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 m<sup>3</sup>/h UF

282 + 234 m<sup>3</sup>/h RO

217 m<sup>3</sup>/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 m<sup>3</sup>/h DAF | 162 m<sup>3</sup>/h UF

66 + 48 m<sup>3</sup>/h RO | 40 m<sup>3</sup>/h MC



Fine-desalinated process water system for tire manufacturing.

Apollo Tyres Ltd. / Hungary

2 x 30 m<sup>3</sup>/h DPRO



Fine-desalinated process water system for tire manufacturing.

Hankook Tire Hungary Ltd. / Hungary

135 m<sup>3</sup>/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 m<sup>3</sup>/h EDR



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

Zoltek Plc. / Mexico

10 m<sup>3</sup>/h

Zoltek Plc. Toray Group / Hungary

10 m<sup>3</sup>/h



Lime sludge thickening system with sludge pressing for chemical plant.

Anwil Group / Poland



# Energy sector



Demineralized water production for power plants:

- Demi water
- Specific electrical conductivity:  $< 0,2 \text{ S/cm}$
- TOC:  $< 200 \text{ g/l}$

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 m<sup>3</sup>/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

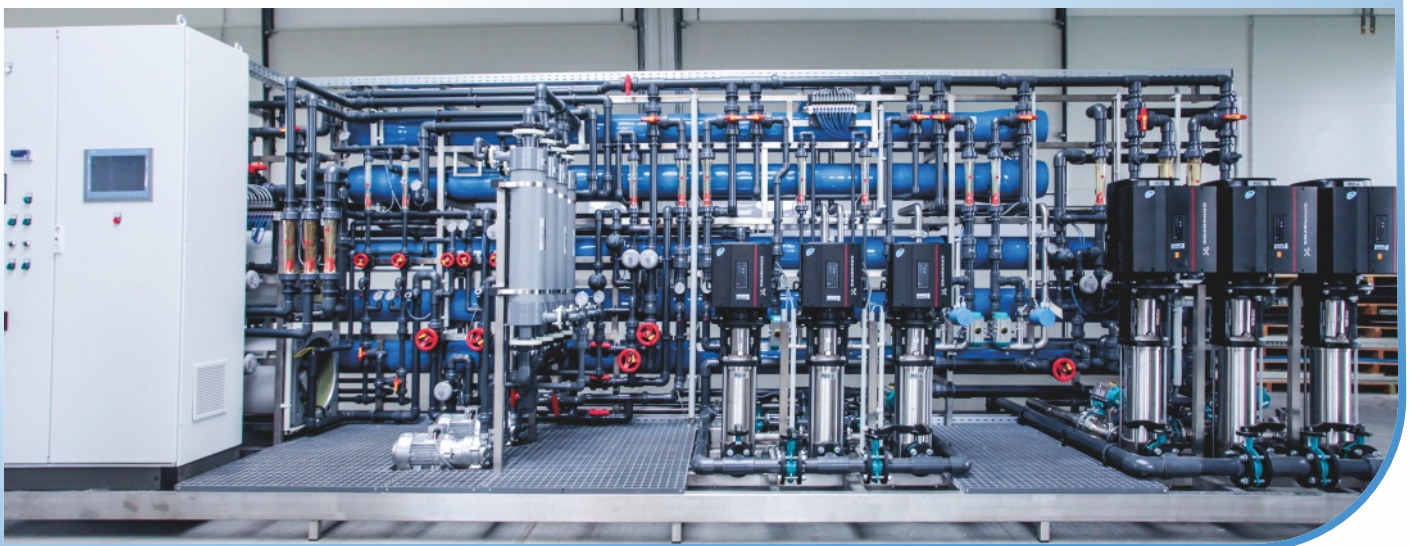
200 m<sup>3</sup>/h IBS / RGF / UF / DPRO / EDI



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 x 30 m<sup>3</sup>/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 m<sup>3</sup>/h MMF / DPRO / CEDI

25 m<sup>3</sup>/h RO / CEDI



Complete implementation of fine-desalinated technological water production system.

Kazatomprom Plc. / Kazakhstan

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



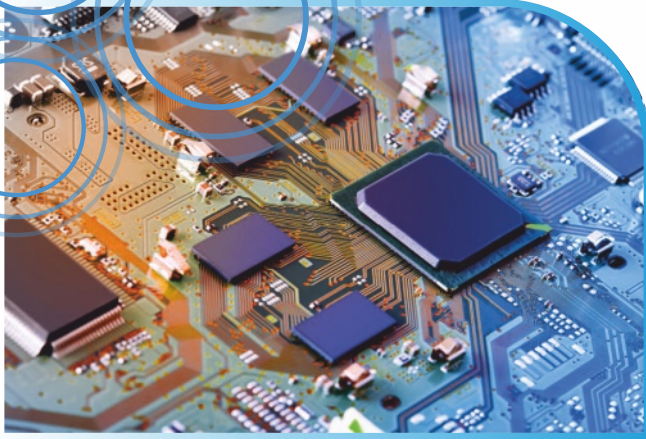
Production of makeup water with conditioning chemical dosing for district heating utility company using well-water and condensate water.

Széphő Plc. / Hungary

6 x 2,5 m<sup>3</sup>/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 m<sup>3</sup>/h demi water  
12 m<sup>3</sup>/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 m<sup>3</sup>/h MMF + 162 m<sup>3</sup>/h CF / RO + 54 m<sup>3</sup>/h RO / CEDI  
60 m<sup>3</sup>/h MMF + RO + CEDI



Technological water and industrial wastewater treatment for copper foil production.

Doosan Hungary Ltd. / Hungary  
Technological water treatment  
90 m<sup>3</sup>/h DPRO / CEDI + 20 m<sup>3</sup>/h MMF / RO  
Industrial wastewater treatment  
50 m<sup>3</sup>/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 m<sup>3</sup>/h MMF / SAC  
32 m<sup>3</sup>/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 m<sup>3</sup>/h RO / CEDI RO+CEDI Budapest  
 3 x 6 m<sup>3</sup>/h DPRO / CEDI DPO+CEDI Dorog  
 2 x 5 m<sup>3</sup>/h DPRO / CEDI DPRO+CEDI Târgu Mureş



RICHTER GEDEON

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

Becton & Dickinson Plc. / Hungary  
 2 x 4 m<sup>3</sup>/h RO / CEDI



Pharmacopeial quality HPW grade purified water treatment system.

Béres Gyógyszergyár Plc. / Hungary  
 1,5 m<sup>3</sup>/h DPRO



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

Human Bioplazma Ltd. / Hungary  
 8 m<sup>3</sup>/h DPRO - PW  
 8 m<sup>3</sup>/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 m<sup>3</sup>/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.

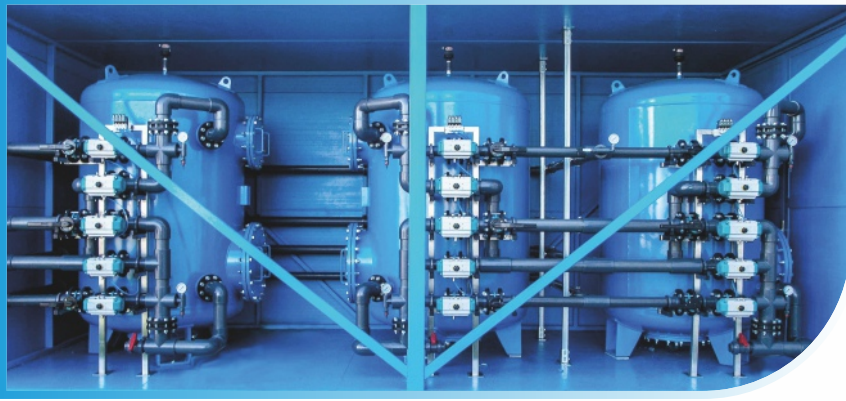
Guardian Orosháza Ltd. / Hungary

440 m<sup>3</sup>/day

LTD Low-temperature distillation.

Doosan Hungary Plc. / Hungary

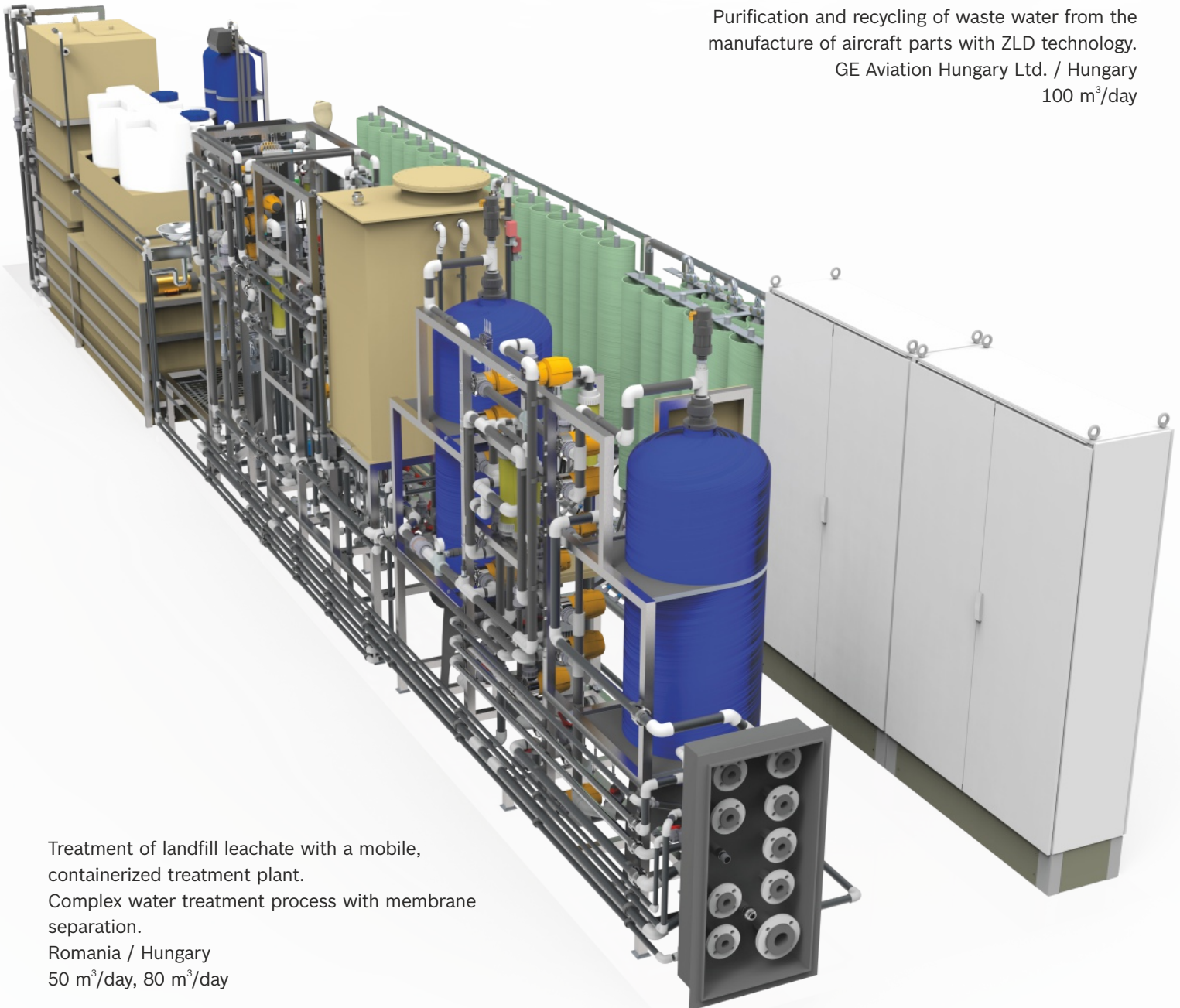




Design, production and installation of a containerized, mobile wastewater purification plant for the treatment of wastewaters from galvanizing processes.  
 Sil Stich Industrie-Lackierung GmbH. / Germany



Purification and recycling of waste water from the manufacture of aircraft parts with ZLD technology.  
 GE Aviation Hungary Ltd. / Hungary  
 100 m<sup>3</sup>/day



Treatment of landfill leachate with a mobile, containerized treatment plant.  
 Complex water treatment process with membrane separation.  
 Romania / Hungary  
 50 m<sup>3</sup>/day, 80 m<sup>3</sup>/day



# 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.  
 Majsai Garden Ltd. / Hungary  
 40 m<sup>3</sup>/h



Irrigation and feed-water production for greenhouse tomato cultivation.  
 Farma Ráječek / Czech Republic  
 16 m<sup>3</sup>/h



Production of desalinated water and boiler feed water treatment in pet food production.  
 Piko-Pet Food Ltd. / Hungary  
 20 m<sup>3</sup>/h



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





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 m<sup>3</sup>/h AMF / RO



# Drinking water treatment



Production of drinking water from surface and underground water sources  
Reduction and removal of suspended solids, iron, manganese, ammonia, arsenic, boron, nitrite, nitrate and methane  
Seawater and brackish water desalination  
Swimming pool and thermal water treatment with ultrafiltration technology

During the past decades, Hidrofilt Group has constructed hundreds of water treatment plants that provide healthy drinking water for cities, towns and villages.



Removal of suspended solids from well water and application of ultrafiltration system for safety reasons at Miskolc Waterworks.  
Mivíz Waterworks Ltd. / Hungary  
33 000 m<sup>3</sup>/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 m<sup>3</sup>/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 m<sup>3</sup>/day

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

DRV Waterworks Plc. / Hungary  
30 118 + 4 080 + 270 m<sup>3</sup>/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 m<sup>3</sup>/day



## DRINKING WATER WITH HIDROFILT TECHNOLOGY



> 1.2 million people



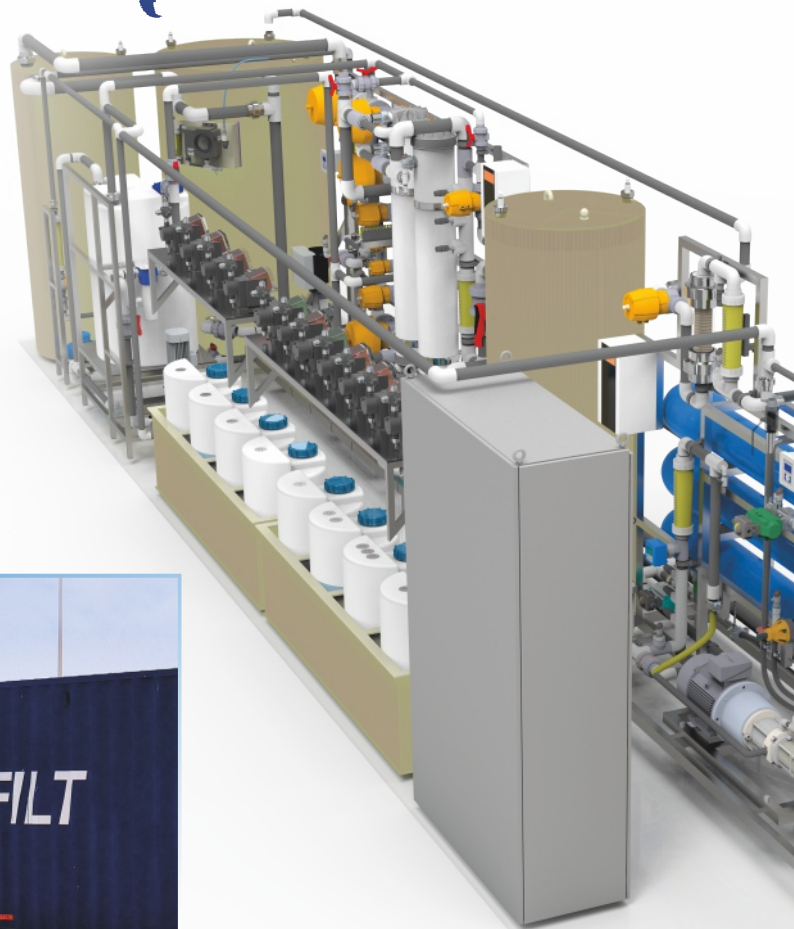
> 2.7 million people



# 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 / EU  
200 m<sup>3</sup>/day MMF / AMF / AS  
Kyrgyzstan, Iraq  
200 m<sup>3</sup>/day MMF / RO



### HidroWell-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



National Disaster Risk Reduction Management Council



# 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, algacides
- **HIDROXIDE** disinfectants

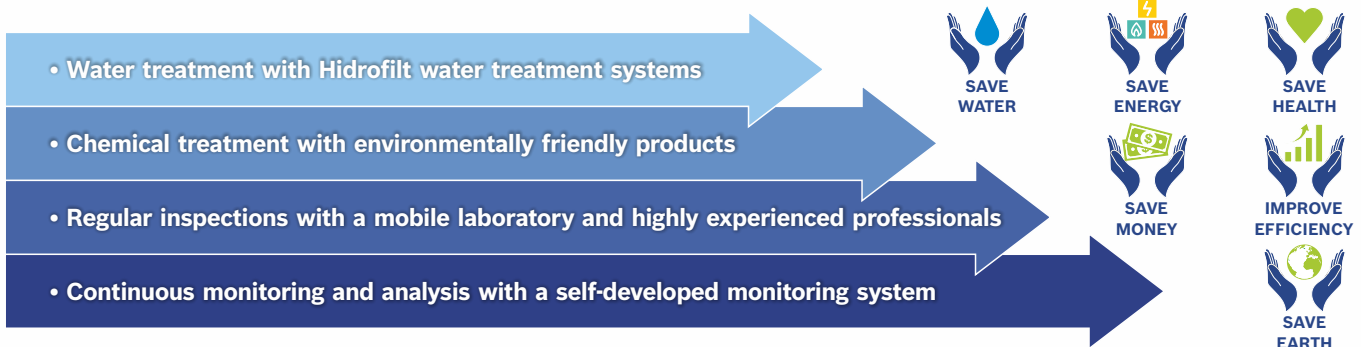
### Membrane separation and pre-treatment

- **HIDROTREAT** antiscalants
- **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



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



## HIDROFILT LTD.

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