THE FUTURE IS HERE
ABOUT US

CWG Group, with its own companies in more than 20 countries and distributors in more than 50 countries worldwide, is one of the largest European distributors of water treatment systems, components and chemicals. We coordinate worldwide recognised manufacturers of water treatment equipment and chemicals in order to offer you full service including engineering, components, chemicals and water treatment systems, installation and technical support according to your specific demands and within the range of estimated budget. Based on our technical skills and expertise we are able to upgrade and optimize existing water treatment systems and that is also a benefit of having us as your partner. We can provide the most efficient solutions based on modern technologies for the treatment of boiler water, cooling systems, processing industry, drinking water and pool&spa. Our experience and equipment provide reliability, short-term delivery terms and competitive prices.

OUR VISION

As a regional leader in water treatment business we strive to strengthen our position and expand our range of products. Therefore, our clients can get total package of the equipment and services just by contacting us.

OUR GOAL

Implementation of modern technologies and the latest features in the field of water treatment and providing the best possible and environmentally friendly solutions for commercial, industrial and municipal applications. In this manner our clients can improve their own business by getting water of the highest quality with reasonable investments and low maintenance costs.

CWG Group

AND NOW! WILL YOU FOLLOW?
C W G R E F E R E N C E
Throughout the years we have gained the trust from our clients from various business areas. According to our experience our products and services can be used in wide range of different applications.

We approach challenges with an innovative, compelling vision and as real professionals, we work hard to meet clients requirements. We are always driven by the same motto:

A SATISFIED CLIENT IS OUR BEST REFERENCE!
MUNICIPAL APPLICATIONS

Liquid – solid separation processes
(coagulation, flocculation, sand filters, anthracite)

Filtration
(removal of iron, manganese, arsenic, ammonia, ultra-filtration, micro-filtration...)

Disinfection
(chlorine gas, chlorine dioxide, UV, ozone...)

Measurements and analysis

INDUSTRIAL APPLICATIONS

Process water
Waste water
Re-use

ENERGY

Boiler systems
Cooling systems
Condensate polish

MEDICINE

Filtration
Water softening and demineralization
Disinfection

HOTELS, WELLNESS R SPA

Filtration
Water softening
Disinfection
Pool&Spa
Anti Legionella systems

COMMERCIAL APPLICATIONS

Households
Apartments
OUR KNOW-HOW SYSTEM PROVIDES KEY FEATURES:

Safety
Reliability
Efficiency
Guarantee
Quality
**TYPICAL WATER TREATMENT SOLUTIONS:**
Filtration, water softening, demineralization, drinking water, etc.

**ALL-INCLUSIVE WATER TREATMENT SOLUTIONS:**
Upgrade and optimization of existing water treatment systems
Waste water treatment
Sludge treatment
Odor control
Technical support and maintenance services

**UPON YOUR REQUEST WE CAN OFFER YOU:**
Engineering
Technical processing
Feasibility Studies
Financing
Planning
Process development
Installation
Commissioning
Training and education of your technicians
The handover and warranty

We provide water treatment solutions to meet specific requirements and at the same time we consider our clients as our partners on the joint venture. With complete service offer we always strive toward establishing long-term business relationships.

**Our clients have possibility to choose among wide range of products and services, available at one place at the same time and that always justifies their investment.**
Filtration is the most common and widely used method for extracting suspended particles, mechanical impurities and excess ions from the feed water. Wide range of filtration materials guarantees selective removal of contaminants and high quality of water for different purposes. Key benefits of filtration process are reliability, stability and long term operation.

New technologies and modern water treatment solutions expand application fields for filtration materials providing simple and cost effective operations.
MECHANICAL FILTRATION

Mechanical filtration is used for removal of mechanical impurities from the feed water, but it can also provide full liquid – solid separation by applying filter cartridges of different porosity.

1. Backwash filters (manual and automatic) with connections from DN20 - DN125 and various pore sizes
2. Sediment filters
   Filter cartridges (plastic simplex/duplex and stainless steel for multiple cartridges). Filter cartridges (PP, fiber, washable, carbon block, dual-layer from 100 µm up to 0.2 µm for wide range of applications).

SAND FILTRATION

Sand filters are used for basic filtration of mechanical impurities and dispersed substances from the feed water. They are filled with multiple layers of high quality quartz sand and gravel of different granulation. In order to achieve better and faster filtration, sand filters are often part of water purification systems containing suitable filter material. Sand filters retain solid particles at their surface and throughout the bed depth. Dispersed particles are retained in the upper sand layer that has the finest granulation.

IRON, MANGANESE AND H₂S REMOVAL SYSTEMS

One of the most important steps in water treatment is iron, manganese and H₂S removal. These impurities can form insoluble hydroxides that can cause some vital parts of water treatment systems to collapse. As far as drinking water is concerned the upper limits for iron and manganese contents are 0.3 mg/l and 0.05 mg/l, respectively. Filter systems operate on the basis of oxidizing Fe(II) and Mn(II) to insoluble forms that are kept trapped throughout the bed depth. Depending on feed water quality and specific application different filter medias can be used. We can apply filter medias with superior capacity that can be regenerated as well as those that require only periodical backwash.

DECHLORINATION – ACTIVATED CARBON FILTRATION

Activated carbon filters are based on adsorption principle and can be applied at every stage of water treatment. Granulated activated carbon is an adsorbent with high capacity for removal of total organic impurities from feed water (75-95%). Water with high organics content has bad taste and odor, and chlorination process makes this even worse, because chlorine reacts with phenols from feed water and forms chlorophenoles. Activated carbon adsorbs residual chlorine and smaller molecular weight organics from water and provides odorless and tasteless water as the final result. Another typical application for these type of filters is prefiltration as prevention for ion-exchange resins and RO membranes.

MULTIMEDIA FILTERS

ARSENIC AND AMMONIA REMOVAL

Multimedia filters are designed according to specific demands and row water quality. Different medias are used for selective removal of specific contaminants and in this manner you can get fast and highly effective water treatment with one system that doesn’t require a lot of space.
We can offer you a wide range of ion-exchange resins certified for application in food industry and drinking water treatment and designed for specific applications.

Softening
- standard
- ambersoft

Deminerlization
Dealcalization
Condensate polishing
Nitrate removal
Selective heavy metals removal
**CWG_SOFT / VAK**  
(compact softeners)

Due to its unique compact design VAK type of water softener is widely used in households, apartments, restaurants, dry cleaning and car-wash. This softener is easy to fit to the interior and it doesn’t require a lot of space. Its efficiency will be obvious right away because calcium carbonate deposits, scale and white stains will become history. One of its features is automatic control of regeneration process, that can be set to start at desired time of the day.

**CWG_SOFT / VAS**  
(simpex system)

VAS - water softener is commonly installed for the purposes of producing required amount of treated water. It is usually designed according to soft water consumption per hour, which ensures sufficient capacity. One of its features is automatic control of regeneration process, that can be set to start at desired time of the day. This softener is widely used in cooling and heating systems, hotels, apartments, etc.

**CWG_SOFT/VAD**  
(duplex system)

VAD - water softener continuously provides treated water 24/7. Efficiency and reliability of this product guarantees that you will have no problem with water hardness at all. This type of water softener is widely used for industrial applications and for the purposes of large and continuous consumption of soft water (0-24h), for large cooling and heating systems, automatic car wash, industrial production (food, wood, glass, metals), hotels, apartments, camps, etc.

**AMBERSOFT**

This specific type of water softener is an up-flow system with ion-exchange resin filled to the very top of the tank. Key feature of this unit is low maintenance cost, due to lower consumption of granulated salt (NaCl) and treated water used for regeneration. This unit is automatically operated by PLC programmed for volumetric control. Regeneration will start when assigned capacity is exhausted.
MEMBRANE TECHNOLOGIES

The best quality of treated water for industrial applications is achieved by membrane separation systems. Semi-permeable membranes extract suspended particles, organic molecules, bacteria, viruses and most of the ions from the feed water.

Reverse osmosis
Nanofiltration
Ultrafiltration
Electrodeionization
Desalination

These technologies can be applied anywhere: for the purpose of process water production in industrial applications as well as for drinking water treatment. Membrane separation technologies provide the highest quality water with max. efficiency and low energy consumption.
Reverse osmosis (RO)
Reverse osmosis is membrane technology used for dissolved ions removal with the efficiency of 94-99%. It is used for desalination, process water and other applications that require demineralized water quality. This filtration method removes many types of large molecules and ions from the feed water by applying pressure to the water when it is on one side of a selective membrane. As a result, contaminants are retained on the pressurized side of the membrane as concentrate while pure water passes through to the other side and is known as permeate.

Nanofiltration (NF)
Nanofiltration is one of the technologies introduced in the last decade, but rising ever since. Nowadays, it is usually applied for drinking water treatment, for softening, decolorization, removal of micro particles. In industrial applications this technology is commonly used for removal of specific contaminants, for example colors. Separation process takes place on the membrane surface, as water passes through the membrane and therefore this technology is used for removal of organics, micro pollutants and multivalent ions. Membranes used for nanofiltration are designed to retain single valence ions.

Ultrafiltration (UF)
Ultrafiltration systems are used for removal of viruses and organics from the feed water. Membranes are designed to remove contaminants in the range 0.001 – 0.1 µm.

Typical applications:
Food industry (proteins, dairy and dairy products)
Metallurgy (oil, water emulsion separation, color treatment)
Textile industry
Waster water recirculating systems

Electrodeionization (EDI)
EDI is the latest technique where electrodeionization is used for final water purification to reach conductivity <1 µS/cm. Initial module has 0.2-4.5 m3/h capacity, and by combination of modules EDI can reach specified flow rate.

Desalination
There are app. 40 million milligrams of dissolved minerals per one cubic meter of sea water. Total dissolved solids (TDS) in cationic forms: calcium, magnesium, sodium and potassium, but also in anionic forms: carbonates, bicarbonates, chlorides, sulphates and nitrates – resulting in high water conductivity, great corrosion potential and bad taste. According to drinking water standards, quality of this water is not acceptable. Therefore, in order to make see water useful and applicable for both industrial or municipal purposes it is necessary to treat it through desalination process.

Water content:
Sea water        (35.000-45.000 ppm NaCl)
Brackish water  (3.500-15.000 ppm NaCl)
Fresh water     (500-2.000 ppm NaCl)
Disinfection is a basic step in both industrial and municipal water treatment. Its efficiency is crucial for the final product quality in food industry and is also necessary for reliable operation of water treatment equipment.

Drinking water
Food industry
Pool & spa
Cooling systems
Pharmaceuticals
Hospitals and hotels
DOSING SYSTEMS

Hypochlorite solution or H₂O₂ is applied by automatic proportional dosing system. In order to achieve maximum accuracy, best possible effects and optimized chemical consumption, pulse water meter is essential part of this system.

UV

UV light is the most common type of disinfection easy to apply in different systems. It is environmentally friendly, does not affect human health and water chemical characteristics. Comparing to other disinfection units, UV system can offer more benefits. These systems don’t affect the taste, odor, color and pH of water and do not require chemical dosing. Installation and handling is easy, there is no need for continuous monitoring of the system and operation and maintenance costs are much lower comparing to alternatives.

CHLORINE GAS

Disinfection by chlorine gas has been dominant in municipal and drinking water treatment for many decades. As the most profitable chemical, chlorine is distributed in gas or liquid state packed in pressure vessels and containers. Vacuum type dosing equipment V10k, and similar models, are used for chlorine dosing in municipal and drinking water treatment. This equipment is also suitable for carbon dioxide (CO₂) dosing (pH reduction and hardness stabilization), sulfur dioxide (SO₂) dosing (dechlorination systems), but also for ammonia (NH₃) and many other applications.

Control: manual/automatic
Capacity: 1 g/h-200 kg/h

CHLORINE DIOXIDE

As alternative to chlorine gas, it is mostly used for drinking water disinfection. Chlorine dioxide is a strong disinfectant with great odor removal efficiency. Comparing to chlorine it has higher oxidation potential and therefore is suitable for removal of organics, viruses or spores that are resistant to chlorine. With application of chlorine dioxide there is no risk of THM or AOX forming. This disinfectant has very powerful effect on water contaminants such as phenols, algae, metabolites or their decomposition products.

OZONE

Ozone provides high efficiency in water treatment for different applications and is environmentally friendly at the same. Although, the market can offer other solutions in form of other disinfection methods, equipment and chemicals, ozone generator is very reliable, has wide range of applications and high efficiency in continuous 24h water treatment systems.
WASTE WATER TREATMENT

There is growing interest for waste water treatment all over the world, especially when it comes to industrial waste water, public waterworks and large municipal and sewerage systems. Along with this, standards for both, industrial and municipal waste water quality are getting higher. In cooperation with European partners, CWG Group offers solutions for waste water treatment and re-use of treated water. Through simple, but reliable and efficient process we can continuously provide high water quality with lower operating costs.

WASTE WATER TREATMENT INCLUDES:

Clarification
Filtration
Aeration
Biological reactors
Disinfection
Sludge dewatering
Odor control
**MEMBRANE BIOREACTOR**

Membrane bio-reactor (MBR) is a combination of two basic operations: biological reactor and membrane separation resulting in unique process where suspended matter and micro-organisms, responsible for biological activity, are being removed from treated water by membrane filtration.

**Inside reactor**

Mixture of in-fluent water and biomass is distributed into membrane module where separation takes place. Resulting permeate is clean water ready to be used or recirculated into industrial process, while biomass is brought back to bio-reactor. In order to maintain sludge activity, an excess of activated sludge has to be extracted from the process, while membrane modules have to be periodically flushed and chemically cleaned.

Depending on technical requirements membrane bio-reactors can have capacity up to 100.000 PE.

**WATER RE-USE PROGRAM**

Depending on waste water quality we can provide various systems for the purposes of water re-use.

Many of our clients all over Europe use our systems and share our vision – minimized total water consumption and lower waste water disposal costs.

Recirculated water has plenty of application and can be re-used for different purposes:

- Irrigation
- Car wash
- Cooling water systems
- Process water
CHEMICAL TREATMENT

We can offer you water treatment chemicals for feed and process water, as well as for waste water recirculating or disposal systems. Chemical treatment will help you lower operation costs, increase efficiency and protect your equipment.

We can provide wide range of chemicals including those FDA approved and certified for drinking water treatment and food industry applications. Therefore, we can produce high quality water according to specific requirements.
BOILER WATER TREATMENT

Chemical treatment of boiler feed water protects boiler surface and minimizes corrosion potential, providing optimum heat transfer and clean metal surfaces. Corrosion and deposit control increases reliability of the system and protects the equipment, while decreasing maintenance costs and fuel consumption. Certain chemicals additionally prevent steam soiling and protect even heat exchangers and turbines.

COOLING WATER TREATMENT

Efficient water treatment provide long-term and safe operation of every open cooling system. Cooling water system is highly affected by micro-organisms from the environment. Biofilm causes corrosion and equipment failures, excessive water consumption and lower heat transfer. Depending on systems requirements, operating conditions and feed water quality we can apply specific chemicals, corrosion inhibitors and deposit control agents.

RO CHEMICALS

Membrane performances depend on contaminants retained on their surface. Suspended matter, micro-organisms and minerals can cause fouling. Those deposits cause pressure drop and lower efficiency. There are various chemicals such as antiscalants, biocides, dechlorinators and cleaning agents used for deposit control that will optimize systems operating conditions and efficiency.

FEED AND WASTE WATER TREATMENT

Coagulation and flocculation are important for clarification of the feed and waste water treatment. We can offer specially designed and highly effective polymers for sludge dewatering for filter press or centrifugal drum, or similar liquid-water separation processes.

BENEFITS OF CHEMICAL TREATMENT:

- MAXIMUM SYSTEMS EFFICIENCY
- LOWER OPERATIONAL AND MAINTANANCE COSTS
- HIGHER RELIABILITY OF THE SYSTEM
- ENERGY AND WATER SAVINGS
- IMPROVED PRODUCTION QUALITY
ACTIVATED CARBON

Expansion of industrial production and increase in air and water pollution have resulted in new and higher standards and regulations for more effective and environmentally friendly air and water treatment solutions. Purification of the most common pollutants is usually done by a combination of mechanical and chemical treatment systems.

Activated carbon is a powerful adsorbent with a range of pores of molecular dimensions and supreme internal surface area. That gives activated carbon its unique ability to adsorb a wide range of compounds from both the gas and liquid phase. For water treatment it is applied to remove organic matter, residual chlorine and other substances that cause bad odor and taste in drinking water. Activated carbon can even remove inorganic matter such as sulfur and sulfur dioxide and for those applications carbon is specially impregnated with various metal salts that chemically bond gas molecules. Activated carbon is produced from high quality and carefully selected raw materials and wide range of products provides solutions for various applications.

ACTIVATED CARBON FORMS:
- POWDERED
- GRANULATED
- EXTRUDED

RAW MATERIALS FOR ACTIVATED CARBON PRODUCTION:
- COCONUT SHELL
- BITUMINOUS COAL
- WOOD
ACTIVATED CARBON IS POWERFUL ADSORBENT FOR FOLLOWING APPLICATIONS:

MUNICIPAL AND DRINKING WATER TREATMENT
(removal of organic matter from well and surface water, dechlorination)

LIQUID PHASE DECOLORIZATION
(glucose and dextrose syrup, sugar refining, oil, wine and variety of products)

AIR PURIFICATION
(magazine and newspapers printing, textile industrial production, air treatment in airports, cigarette filters, petrochemical industry, household hoods etc.)

TOXIC GAS REMOVAL
(municipal and clinical waste incineration)

REACTIVATION

Saturated granular or palletized activated carbon can be recycled and re-used as fresh activated carbon in lot of applications where it is used as adsorption media. Recycling is done by thermal reactivation. We can provide suitable reactivation concepts to our clients depending on requirements. Recycling by thermal reactivation is an environmentally friendly method that reduces CO2 emissions over the activated carbon and contributes to a sustainable use of available resources.
WATER TREATMENT COMPONENTS
ACCESSORIES AND SPARE PARTS

Control valves (Fleck, Siata)

Pressure vessels
Distributors (threaded, bayonet, stack)
Spare parts (remote meters, micro-switches, injectors, pistons)
Brine tanks (salt grids, air checks, safety brine valves, brine wells)

Membrane (spiral, tubular)
Membrane housings

Dosing pumps
Dosing tanks
Pulse water meters

UV lamps

Mechanical filtration:
- Filter housings
- Filter cartridges
- Filter plates

Backwash filters

EDI cells
Pall rings
Ceramic balls

PE storage tanks
ION EXCHANGE RESINS

Cation resins (strong and weak acid)
Anion resins (strong and weak base)
Mix bed resins

Selective resins for nitrate and borates removal, organic scavengers, heavy metal extraction, etc.

Variety of resins certified and for drinking water treatment food industry applications. Monodisperse within required range.

FILTER MEDIA

CLARIFICATION
- SAND AND GRAVEL
- ANTHRASITE
- FILTER AG
- TURBIDEX

IRON REMOVAL
- BIRM
- GREENSAND
- FMH
- CATALOX

AMMONIA REMOVAL
- CRYSTAL RIGHT
- ZEOSORB

ARSENIC REMOVAL
- TITANSORB
- FILTERSORB HSR

DIATOMITE AND PERLITE

NEUTRALIZATION
- FILTERSORB CALCIT

ACTIVATED CARBON (powdered, granulated, extruded)
There is a policy that drives us to insist on high quality parts of equipment because that is the only way to provide reliability and long-term operation of the system. Every offer we make is based on experience, theory and genuine know-how, with tools made of both traditional and modern technology design and equipment. We work hard to improve product characteristics and design reliability. Close interaction and communication between our engineers, our suppliers and our clients is a guarantee for high quality solutions. Our experience and equipment provide reliability, short-term delivery terms and competitive prices.

When managing water distribution You need to have total control. Over price. Over final results. Over complete process. Our solutions completely meet Your requirements.
PVC PARTS AND EQUIPMENT

PVC piping
PVC fittings
• elbows
• T-equals
• unions
• sockets
• backing flanges

PVC valves
• ball
• butterfly
• laboratory
• diaphragm
• with electric actuator
• cone check

PVC flow meters

ANALYSIS AND INSTRUMENTATION

System control: periodical and on-line
Flow rate
Pressure
Level
Temperature
Density, humidity, conductivity, ORP, pH, turbidity

Complete analysis of drinking, process, cooling, boiler, pool&spa water:

Controllers
PLC
Salt control
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TRETMAN I OBRADA VODA
Voda za piće / Tehnološke vode / Procesne vode / Vode za farmaciju / Otpadne vode / Bazenske vode

KONZALTING
Commissioning - sustava / Commissioning - opreme / Optimalizacija / Praćenje razvoja projekta / Critical solution

INŽENJERING
Procesni projekti / Tehnološki projekti / Izrada idejnih rješenja / Izrada elaborata - zaštita na radu - zaštita okoliša QA i QC planovi

USLUGE
Proizvodnja / Montaža / Puštanje u rad / Servis / Rezervni dijelovi / Održavanje-Outsourcing / Osposobljavanje osoblja