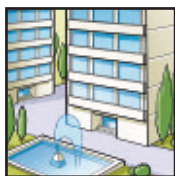


## CUSTOM-ENGINEERED WATER SYSTEMS

Twenty-six billion cubic metres is the total sum of France's annual water consumption of which half is used by industry. Diluting, steeping, cooling, washing, rinsing, discharging, processing, heating ... - for all those operations one « ideal quality of water » can be obtained by using the right treatment. As for the ideal water for domestic tasks, the new quality conditions also offer incentives to consumers to use treatment systems. Such a variety of applications has led us to set up specialist PERMO departments per field of activity in order to offer "custom-engineered water" to users, water matching their specific needs.



### Résidentiel DEPARTMENT



### Public sector DEPARTMENT



### Conditioning DEPARTMENT



### Industry DEPARTMENT



### Pool DEPARTMENT

**EXPERIENCE, THE CORE OF INNOVATION...**



DEPARTMENT

# Résidential

- Softeners
- Polyphosphate dosemeters
- Cartridge filters
- Sieves, sand filters
- Miniature osmosis machines
- UV sterilizers
- Circuit treatments
- Descaler pumps

Designing equipment for that huge market involves a special approach; PERMO has therefore assigned one of its design offices the task of researching and developing totally standardized components and equipment meeting the needs of the domestic water treatment market.



A network of 350 Permo Pilot Installers throughout the country and more than 180 authorized Permo distributors make up the spearhead of the residential department.

When efficacy means design; DATA 7, a comprehensive range of softeners, 10 to 75 litres of resin. The convenience of softened water.



PERMO's technological know-how has always been at the service of all fields of activity. We place the fruit of our experience with industry at the service of domestic users who can now benefit from PERMO developed technologies. Using some 150 litres of water daily, all French citizens know that treated, softened water is indispensable to modern life just as much as a fridge or washing-up machine. That explains why more than 300,000 PERMO domestic softeners currently treat the «ordinary water» flowing from the tap.

Used with DATA 7 and OPTIMO softeners, the AQUAtotal revolutionary descaler is one of the residential department's beacon products.



Développé par PERMO, OPTIMO l'adoucisseur d'eau compact à «haut rendement» pour un encombrement extrêmement réduit ( le plus petit adoucisseur d'eau du monde ), est l'un des exemples du savoir faire et de l'ingéniosité du bureau d'études PERMO.

PERMO's residential departments offers a wide range of products and equipment for domestic users. Polysulphate dosers, UV sterilizers, miniature osmosis machines ... Below, our original cartridge filter with the Permosignal fouling indicator.



# Développement and Quality...



From components fitted to standard mass-produced water treatment equipment (PERMO Data ion exchangers) through to advanced industrial water treatment chaining systems, PERMO addresses the needs of even the most demanding users.

An efficient scaling prevention device with the capacity of treating all water installations in the public sector without destructuring the water, AQAtotal is a perfect example of the fruit of the BWT group's research. AQAtotal was awarded an international patent.

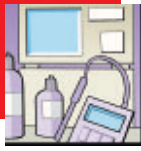


Systematic verification of equipment is carried out in order to guarantee irreproachable performance for the user.

Of recent development, LIFLO floating bed demineralizers (compact units for the production of demineralized water) are devices integrating the latest ion exchanger technical improvements. They are the perfect example of PERMO know-how.



Water treatment equipment uses special components: softener valves, ion exchange control boxes,... As early as the late seventies, PERMO enhanced the performance of its equipment by developing original components. PERMO was thus the world leader in adopting microprocessors to program standard water treatment equipment operations. By combining industrial experience on the one hand with cutting-edge technologies on the other, PERMO is well armed to turn out high performance, reliable, top quality products. The search for quality, PERMO's priority target, is integrated in the design of new products, then with all stages of its manufacture. Acknowledgement of those qualities by partner and user professionals explains why PERMO is a front runner both in domestic markets and in the export components market in main European countries (BWT group).



DEPARTMENT

# Conditioning

- **Cooling**
- **Industrial waters**
- **Thermal stations**
- **Production of steam**
- **Process water**
- **Process**
- **Sanitary water**
- **Closed circuits**



Even at pivotal strategic sites, conditioning plays a major role (steam, industrial water, ...) View of the cooling towers at the CATTENOM (54) nuclear power station (CNPE).

The conditioning department is equipped with all the latest imagery technologies. An endoscope is used for visual inspections where the inspection routing is winding or in the case of difficult access (boilers, exchangers, sterilizers, ...).



Diagnostic and evaluation performed on site by our specialists.

Analysis, diagnostic, prescription, advice, economic evaluation, treatment program monitoring, testing serviceability of equipment and circuits, corrosion monitoring, bacteriological testing, operational personnel training,... PERMO's conditioning department offers industry a global strategic approach.



PERMO's conditioning department places at the service of its partners a wide range of physico-chemical measuring instruments, electro-chemical corrosion control instruments,... Above, the mobile DR 2000 laboratory for quantitative analysis of water combines microprocessor technology, sophisticated optical systems and the support of a comprehensive structure to ensure the analysis is reliable and reproducible.





## DEPARTMENT

# Industry



- **Separating Techniques**
- **Ion exchangers**
- **Membranous Techniques**
- **Environment Techniques**
- **Disinfection Techniques**
- **Sterilization Techniques**
- **Qualification Procedures**



Clarification unit for river water.  
Automatic air / water wash filters

Food industry

Pharmaceutics

Parapharmaceutics

Micro-electronics

Cosmetics

Chemical Industry / Oil industry

Services / Hospitals

Energy

Glass industry

Mechanical Engineering /

Metallurgy



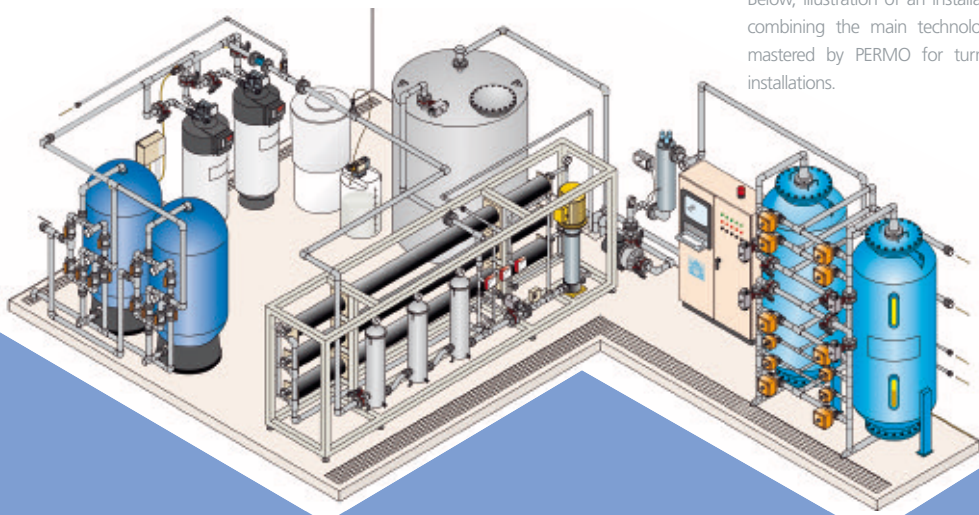
3 reverse osmosis units, 1 x 50 m<sup>3</sup> / hr and 2 x 35 m<sup>3</sup> / hr.

Units designed for the production of ultra-pure water in the manufacture of integrated circuits.  
Complete 100 m<sup>3</sup> / hr installation.

PERMO's experience is backed by several decades of awareness and response to industrial water treatment needs from any source and of any type: underground supplies, surface water, brackish water, sea water, residual water, process water... and whatever the specific challenges to be met; slightly refined water (service water) for limited needs, or highly specialist water for extreme conditions (process waters especially contributing to the quality of the finished industrial product).

That long experience, the in-depth knowledge of all markets, the specialization of the individual teams, the interplay and mutual, positive contribution between the concepts of standard and «custom-engineered» equipment components, the quality and convenience of the service accessible at any location in the country and the perennality of the company offer the best guarantees for manufacturers when they choose PERMO.

Below, illustration of an installation combining the main technologies mastered by PERMO for turnkey installations.



# DEPARTMENT Pool



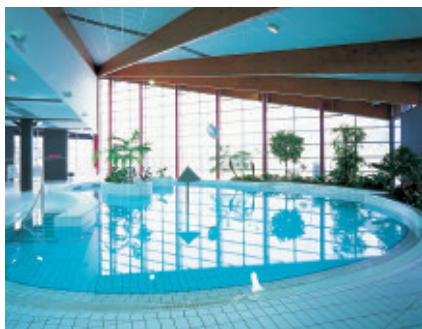
- **Public pool treatments**
- **Private pool treatments**
- **Sand and double-layer filters**
- **Conditioning products**
- **Chlorine/pH control**
- **Ozone machines**
- **Dosing sets**
- **Sealed parts**

The treatment of swimming pool water, whether in the public sector or for single family use, demand a specialist's skills and approach to guarantee high quality water in terms of limpidity and innocuousness. PERMO's experience and expertise dates back 50 years in this specialist field where, above all, the edutainment aspect must not exclude rigour. Equipment originality and reliabi-

Permoozone; ozone efficacy at the service of private pool users.



From hotel pool treatments ...



lity, service excellence and proximity are the advantages placed at the service of professionals or domestic users by PERMO.

Permoboy automatic sand filter (private and hotel pools).

...to local authority pools, Permo expertise guarantees quality.

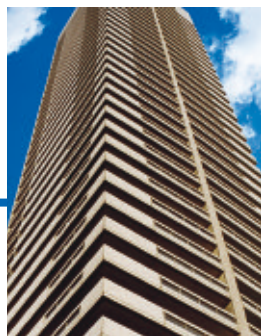


DEPARTMENT

# Public sector



- Softening
- Filtration
- Corrosion inhibitive treatment for:
  - sanitary water
  - heating circuits
  - air-conditioning circuits
- Technical inspection contracts



Tertiary and public building sectors cannot allow anyone, anyhow, to treat their waters. Water treatments in our modern age call upon increasingly sophisticated techniques where improvisation is out of place. When water treatment systems malfunction, repair costs can run into millions. Safe systems in buildings cannot be alternatives. Current solutions are becoming inadequate and are being replaced by true custom engineered water treatment programs. PERMO's advantages in that area are considerable: 50 years experience of treating water, total control of all processes backed by a wide range of equipment.



In the case of decorative public basins (town fountains, town parks,...), filtration plays its part in the valorisation of the site, however prestigious it might be. Decorative Louvre Pyramid basin. Automatic Permoby sand filtration set.



PERMO 7000 A4X Control and PERMO 8000 A4X softener are two of the automatic water softeners included in the wide range addressing the needs of the public hospital sector and of industry.



The different filtration techniques enable the use of natural waters such as from bore holes or rivers - recycled in ponds or basins (water walls, leisure parks), filtration offers its contribution for optimising operating costs. Above, the water wall at the Futuroscope leisure park.



## CUSTOMER

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