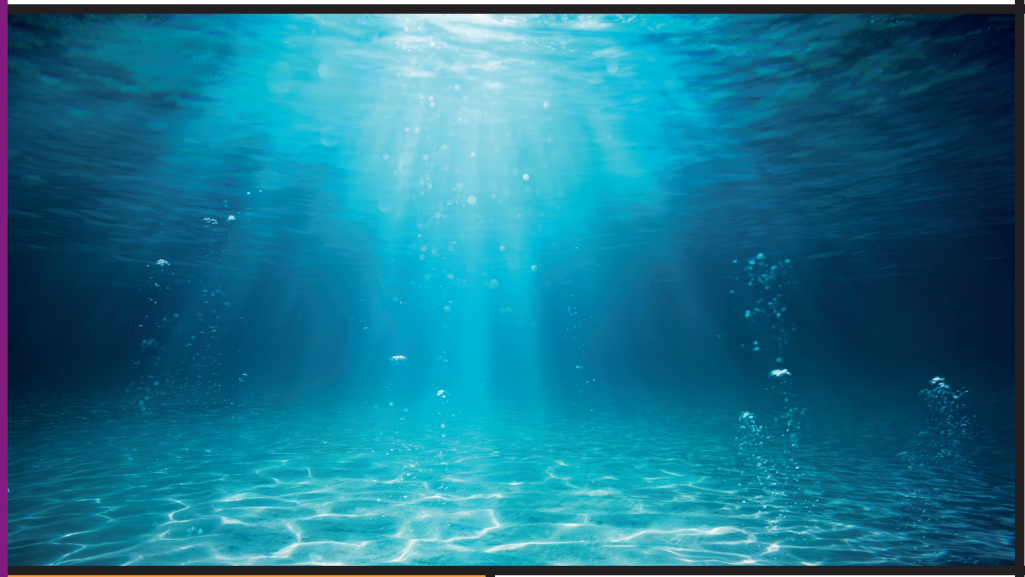
BOPP Water Filtration



The Art of Swiss Precision

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Because clean water should never be a compromise.

Zürich Headquarters

Founded in 1881 and based in Switzerland, G. BOPP + Co. AG has developed from a manufacturer of coarse wire products into a world leading producer of the finest high tech woven metal meshes. Extremely fine wires often measuring less than 0.015mm in diameter are processed into precision woven meshes manufactured to the highest quality standards. BOPP operates across the globe through a comprehensive network of representatives and agents, with wholly owned subsidiaries in Germany, UK, Italy, Sweden, USA, Mexico, Korea and China.

Security for the world's most vital resource

There is no life without water. This is why we are focused on using our products to make a tangible contribution to protecting this resource. Too great a percentage of all wastewater remains inadequately treated when it returns to the natural cycle. BOPP meshes are also making an important contribution to improved water pollution control, for example protecting against the proliferation of invasive species in ballast water and the filtration of microplastics.

Filtration is our core competency

Filtration is our daily business – and has been for decades. Even before water filtration came to the public attention years ago, we had already been involved in this fundamental task since the 1970s. Over the years, we have accumulated extensive experience which directly influenced our dealings with individual customers. During each evaluation process, we support our customers through development partnerships, produce prototypes as required, engage in benchmarking and work closely with them to achieve the optimum component design.

Every application has its own challenges – we match these

Even where the element itself may be identical in every case, the applications are usually significantly different, whether we are looking at corrosion resistance in seawater, robustness for high or pulsating pressures, advanced dirt holding capacity for high solids loading or a required filter fineness. Through BOPP's comprehensive product range we offer a extensive product portfolio for the most diverse requirements. The optimal solution does not end with choosing the correct product specification. Using our wide-ranging plant and equipment, we fabricate the meshes into individual solutions tailor made for your processes.

Part of the solution, not part of the problem

Woven metal meshes offer many advantages when compared with alternative filter media, such as solutions made from plastics. Whilst metals clearly offer improved longevity, which in itself is already an important consideration in terms of sustainability, neither do they release microplastics into water caused by the actions of abrasion and erosion, with all the resultant implications for future pollution. Plastics-based media often contain PFAS (eternity chemicals). Metal meshes are PFAS-free and are easily recycled at the end of their useful life. We remesh the frames in-house using our remeshing process and breathe new life into them.

One element – many applications

From drinking water through industrial processes, wastewater and environmental technology to rational food production processes, the requirements for basic water filtration differ significantly. The deciding factory is always the water quality required and the terms of reference of our customers.

Wastewater filtration

Whether for communal effluent treatment in sewage treatment plants or for industrial applications, BOPP has many years of experience and a comprehensive product portfolio to meet the many different challenges.

Fresh water filtration

In freshwater filtration, woven metal meshes are used for mechanical particle separation in water works, fresh water for industrial applications and domestic use. Abrasion and corrosion-resistant stainless steel meshes are commonly used.

Microplastics

Microplastics in unfiltered water are increasing – with drastic consequences. Using BOPP meshes offers reliable protection wherever water contaminated with microplastics is taken into or released from the water cycle.

Tyre wear particles

The Euro 7 standard comes into force in 2028, which will also regulate tyre wear particles. Downstream filtration of particles released into the roadside environment will remain essential for the long term. BOPP Group products are contributing to the containment.

Drinks industry

Many breweries use our meshes for source water filtration, as well as for fruit juice production where fruit pulp is sieved, where lactose is filtered from milk and many more. A constant for all applications – the longevity of BOPP meshes.

Industrial process water

Water for use in industrial processes sometimes contains valuable solids which need to be separated out before the water is released into the water cycle. The more precise and fine the sieving mesh used, the more solids can be retained from the water.

Invasive species

Globalisation and climate change are already enabling invasive species to settle in alien environments, for example the quagga mussel, which is damaging water treatment plants. Robust composite meshes from BOPP provide an effective solution.

Fish farms

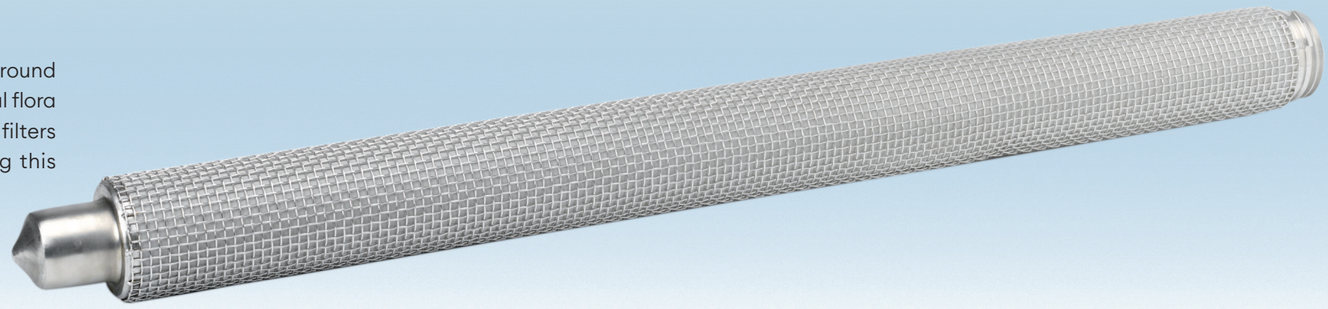
Modern fish farms are largely closed water cycle systems. This protects resources but requires advanced filtration systems to remove food remnants and excrement from the water. Woven metal meshes are particularly suited to this application.

Cooling water

Major industrial corporations maintain their own water preparation plants. The water comes mainly from rivers and contains sand, stones and other impurities which need to be filtered out prior to use.

Ballast water

International shipping carries small life forms around the world in ballast water, to the detriment of local flora and fauna. Corrosion-resistant ballast water filters make a significant contribution to containing this proliferation.



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BOPP water filters – the benefits

Choosing to use metal meshes over other filter media is one thing, selecting BOPP meshes is another. We offer the best filtration results, durable solutions, robust meshes, corrosion resistance, maximum flow rates and reduced demand for energy, all in one place.

Solids loading
For effluent treatment, solids loading is a basic consideration. The aperture geometry of our filter meshes is specially designed to manage this.

Extended working life
The high dirt-holding capacity of our filter meshes enables minimal system downtime and reduces the number of filter elements to be replaced.

Corrosion resistance
At BOPP, we use stainless steel meshes to DIN AISI 304L and 316L. For especially corrosive environments such as seawater, we use 904L and special alloys based on titanium Grade 2, nickel-based superalloys such as Hastelloy, Monel 400 or Inconel 625 or copper nickels such as CuNi 90/10.

Robust
For high water pressures and sharp objects or biomasses, installing our comprehensive range of composite meshes is a smart choice.

Surface efficiency
Due to the higher levels of permeability of our filter meshes when compared with traditional filter media, the filter surface area can often be reduced thereby saving space.

Backwashing capability
Our filter meshes are designed to prevent blockages. The surface filter cake can therefore be backwashed far more effectively than conventional filter media.

Flow optimisation
The open area of the mesh and the high aperture count are configured to yield minimal pressure drop, therefore achieving the least possible power requirement for the filtration process.

Rescreening service
At end of life for the filter element, we offer a rescreening service where we process the filter frames you send to us and tension these using new meshes.

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Products

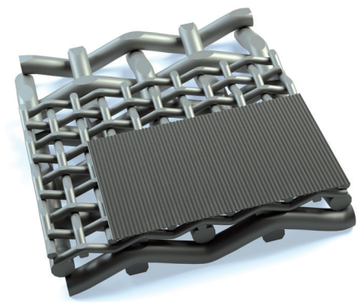
Over the years, the different fundamental systems such as filter frames, filter drums and filter cylinders have stood the test of time in water filtration applications. The products installed are purpose designed to match the challenges of the individual processes to achieve the best results.

Betamesh-PLUS

Betamesh-PLUS is the first choice for precise and efficient filtration processes. The definition of the wire diameter ratios and wire spacings facilitate exceptional filtration properties and the smallest aperture sizes whilst achieving the highest flow rates. Betamesh-PLUS is a surface filter and therefore clearly easier to clean and helps prevent clogging.

Composite-PLUS

For applications requiring increased stability, we have reinforced our Betamesh-PLUS filter meshes with additional sintered support layers. This creates composite meshes which provide greater mechanical stability and durability in demanding operating environments, even with aperture sizes of just five microns.



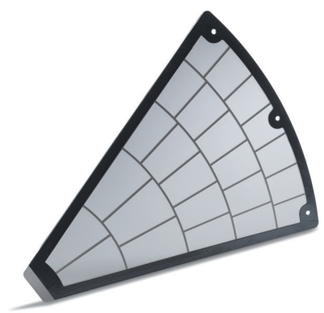
Illustrative image

Filter drums

A popular choice for water treatment due to the high solids loading. Filtration and solids separation take place in the rotating drum. The drum consists of individual filter elements, which can be exchanged individually where required.

Filter cylinders

Space saving, robust and multipurpose, filter cylinders are used in the most diverse water filtration applications. Dependent upon filter design, they are suitable for inside-out as well as outside-in filtration

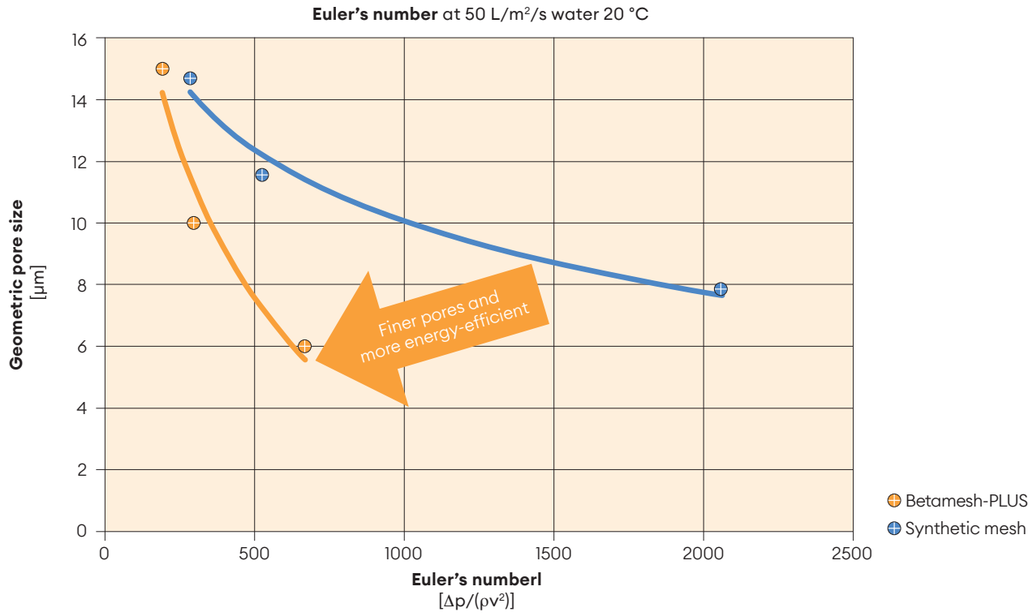


Filter frames

Either supplied by our customers or manufactured by ourselves, we tension equipment-specific frames using our own in-house tensioning equipment. Correct tensioning contributes towards the longest possible operating life for the frames.

BOPP – promises kept

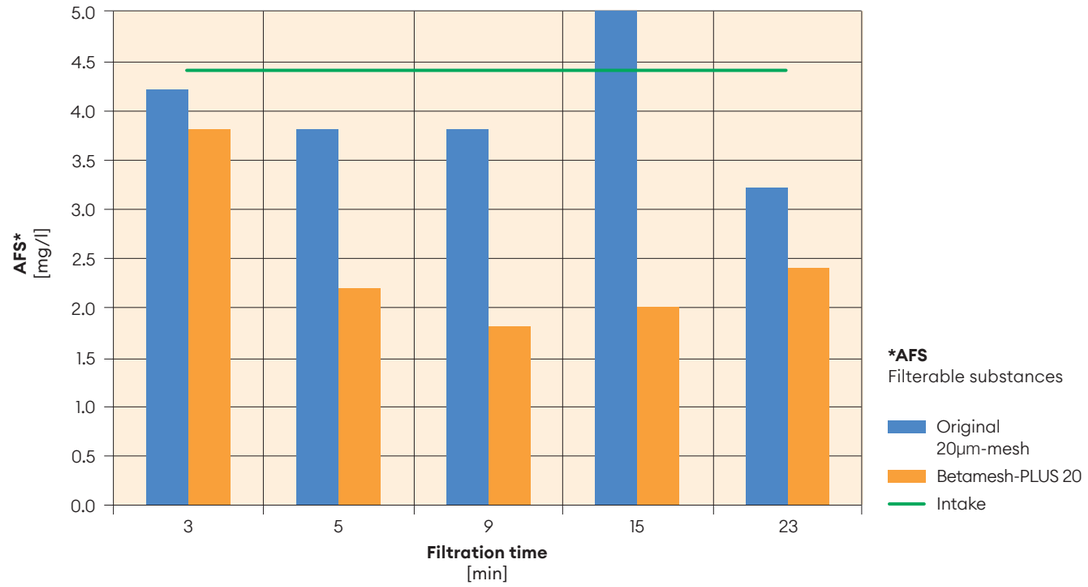
Anywhere water is filtered, synthetic meshes are often used. As woven metal meshes offer obvious advantages, the following comparative measurements should be considered. For the measurements quoted we have used our premium filter mesh Betamesh-PLUS.



Synthetic meshes can also achieve very fine aperture sizes, but in combination with the open surface area there is a clear differential. Metal meshes enable, a significantly greater open area, especially at small filter finenesses. This facilitates noticeably higher flow rates, as the graphic above clearly demonstrates.

Increased permeability when compared with synthetic meshes results in:

- Reduced pressure drop
- Higher flow rates, increasing the filtrate volume and therefore the productivity of the filtration process
- Reduced energy requirements, reducing both the resource requirement and operating costs
- Reduced environmental impact for the filtration process and therefore the product being manufactured
- Reduced filter surface area. To achieve the identical pressure drop and energy requirement with the use of a synthetic mesh, the required filter surface area when Betamesh-PLUS is used is clearly smaller.



Working in cooperation with the University of Stuttgart, independent comparison studies conducted by the sewage treatment plant (education and research, 10,000 P.E.) (LFKW) have evidenced significant results with regard to longevity and filtration performance.

- on average 40% greater reduction in filterable matter on discharge compared with other filter media with identical aperture sizes
- LFKW findings document a 55% longer filtration time before achieving the maximum permissible pressure drop

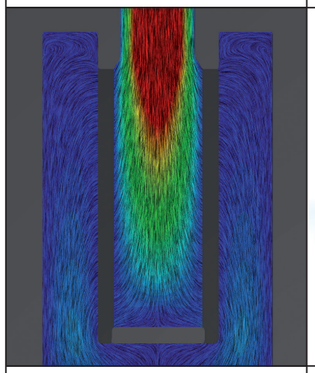
BOPP – our expanded range of services

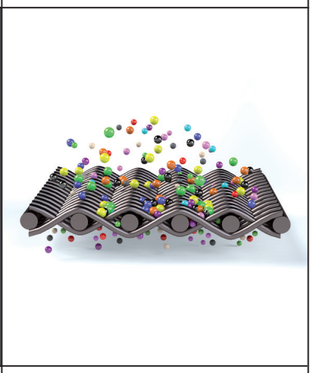
BOPP not only leads the world with exceptional filter meshes but also specialises in further processing these meshes. Our comprehensive range of plant and equipment enables us to process mesh rolls according to customer specification into semi finished goods or as an assembly, ready for integration directly into your production processes.

Engineering:

We are pleased to support you in choosing the correct mesh specification in terms of flow values, material properties, geometric form and component layout with:

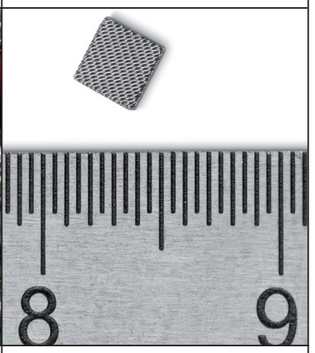
- Requirements Analysis
- Material recommondations
- Design suggestions
- Construction drawings
- Cost calculations
- Production technology





Fabrications:

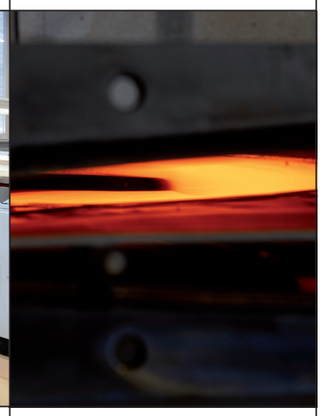
- Precision cutting and stamping
  - Perfect cut edges and angularity
- Forming, bending, deep drawing, edging
- Welding, soldering, annealing, tensioning
- Building prototypes, one-offs
- Automated mass production
- Process oriented packaging



Thermal Treatment:

Using a variety of treatments, the mechanical properties of materials such as hardness, elasticity and plasticity can be matched to further processing requirements.

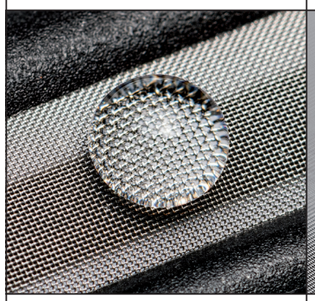
- Workability optimisation
- Variable hardness and plasticity
- Elimination of loose wires on DKS meshes
- Stress relief annealing

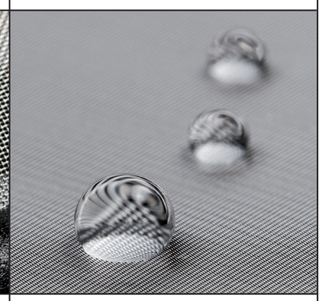


Moulded Parts:

On request, we can fabricate our meshes into moulded parts to your individual specifications. For example:

- Sintered laminates
- Filter frames
- Filter candles
- Star filters
- Discs
- Pleated filters
- And many more

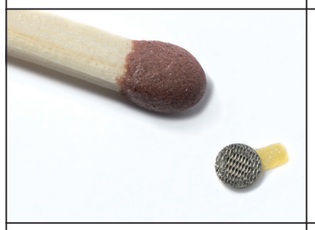


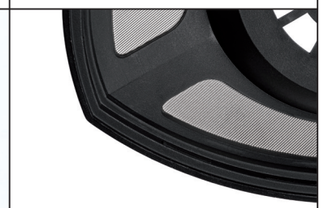


Coatings:

Our hydrophobic coatings enhance performance in coalescence filters – for example, when separating water and kerosene.

- Hydrophobic & oleophobic with HC8
  - Contact angle up to 145°
  - Temperature resistance from -50 to 200 °C
  - Chemically resistant
  - UV-resistant

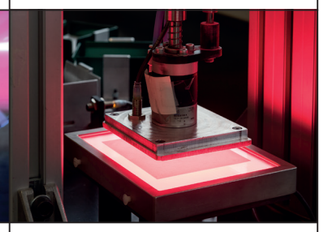




Partnering:

In partnership with renowned companies across the globe, we can also offer additional fabrication and processing capabilities for tasks including:

- Back injection
- Component assemblies
- And many more



Quality Control, Measuring:

- Customer-specific quality control processes
- Issue of measuring protocols
- Certification, attestations
- Flow measurement
- Glass bead testing
- Bubble point testing

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Seven good reasons to choose BOPP

The power to innovate at BOPP is based on decades of experience. Alongside exceptional product characteristics in the most diverse sectors, we also excel in terms of fundamental attributes and qualities.

01

Quality

We always maintain strict compliance with industry specific weaving standards. What's more, we have created our own in-house standards alongside each of these, which demand far more than the officially accepted values in terms of challenges and tolerances.

02

Experience

Thanks to in-house research and development and valuable feedback from our customers in diverse industrial sectors, we have acquired an enormous wealth of experience, which is used in consultancy as well as product development.

03

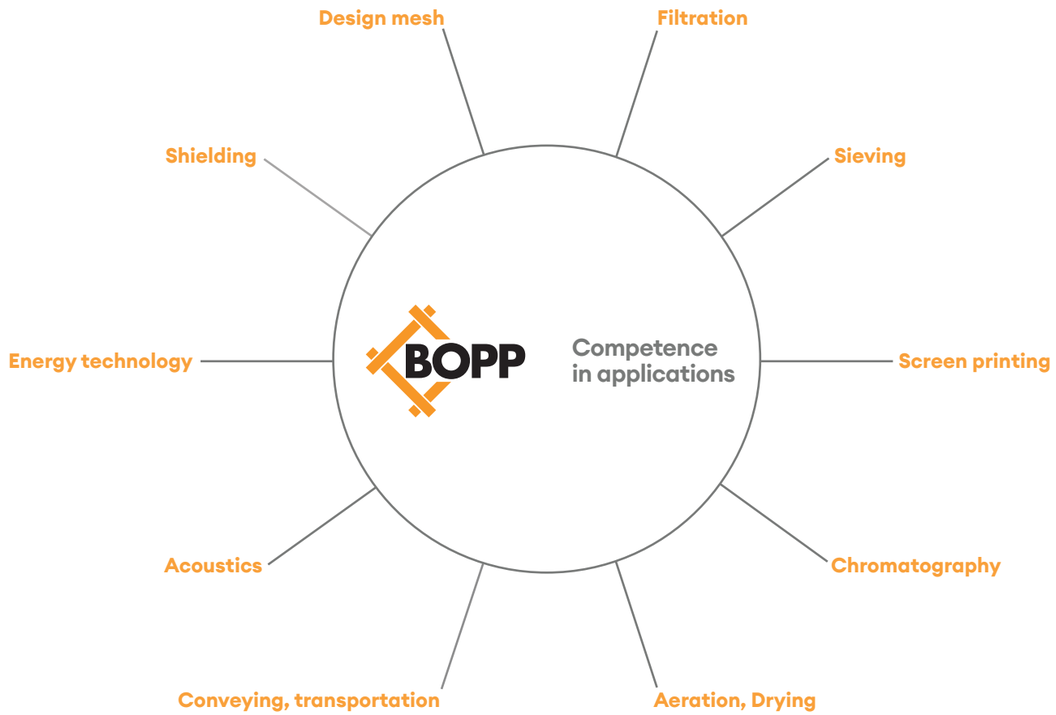
Cost Efficiency

We continue to find new ways to increase our production efficiencies with a simultaneous increase in quality standards.

04

Reproducibility

We maintain a process orientated approach to ensure optimum reproducibility.



05

In-house Wire Drawing

We are the only fine wire weavers to operate our own fine wire drawing plant. This means we can ensure reliable delivery schedules and maintain quality procedures totally independent of external providers.

06

Security

We manufacture in a trade-friendly and commercially stable environment, and are therefore able to guarantee above average levels of product availability, supported by extensive stockholding. In addition, the BOPP Group operates three separate production facilities, providing higher levels of process security in the supply chain.

07

Protecting the Environment

Our manufacturing plant complies with modern standards in terms of energy use and environmental sustainability. We are active participants in programmes to improve energy efficiency, and a member of Cleantech organisations.

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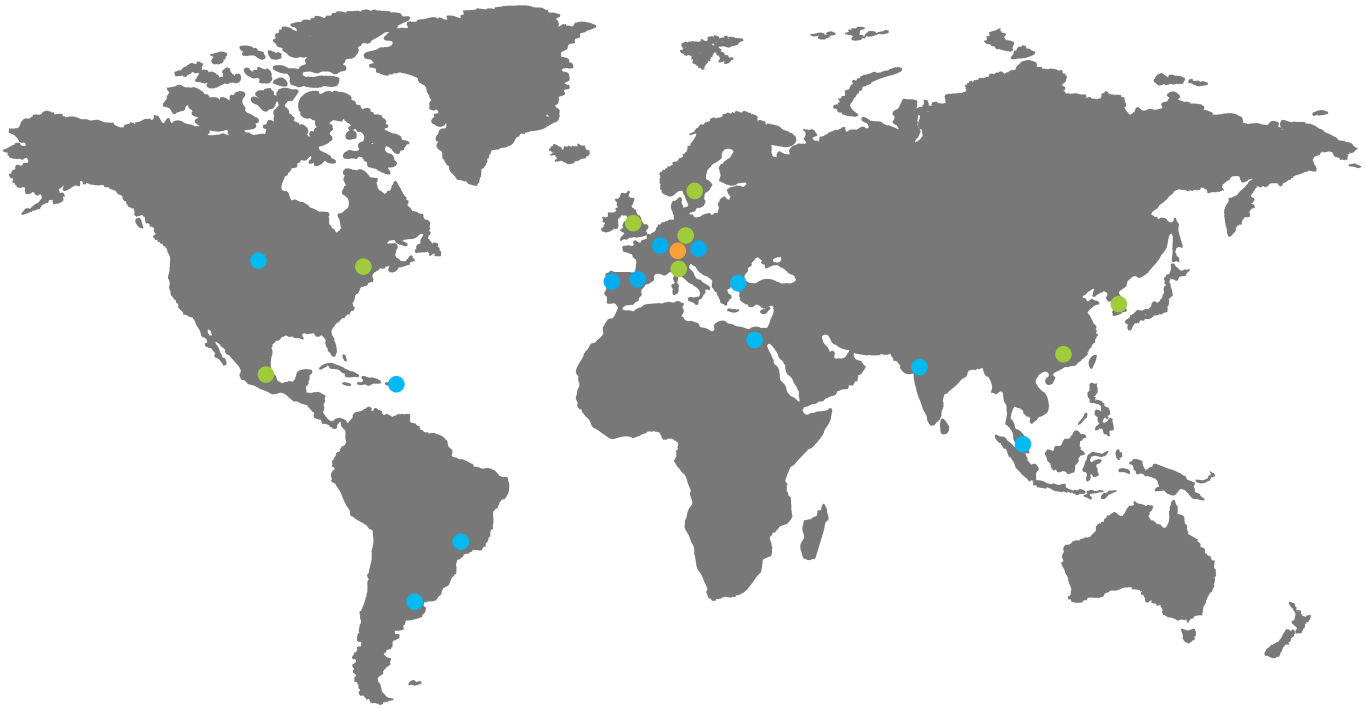
BOPP

Water Filtration

The BOPP Group



- Headquarters
- Subsidiaries
- Representatives/Agents

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