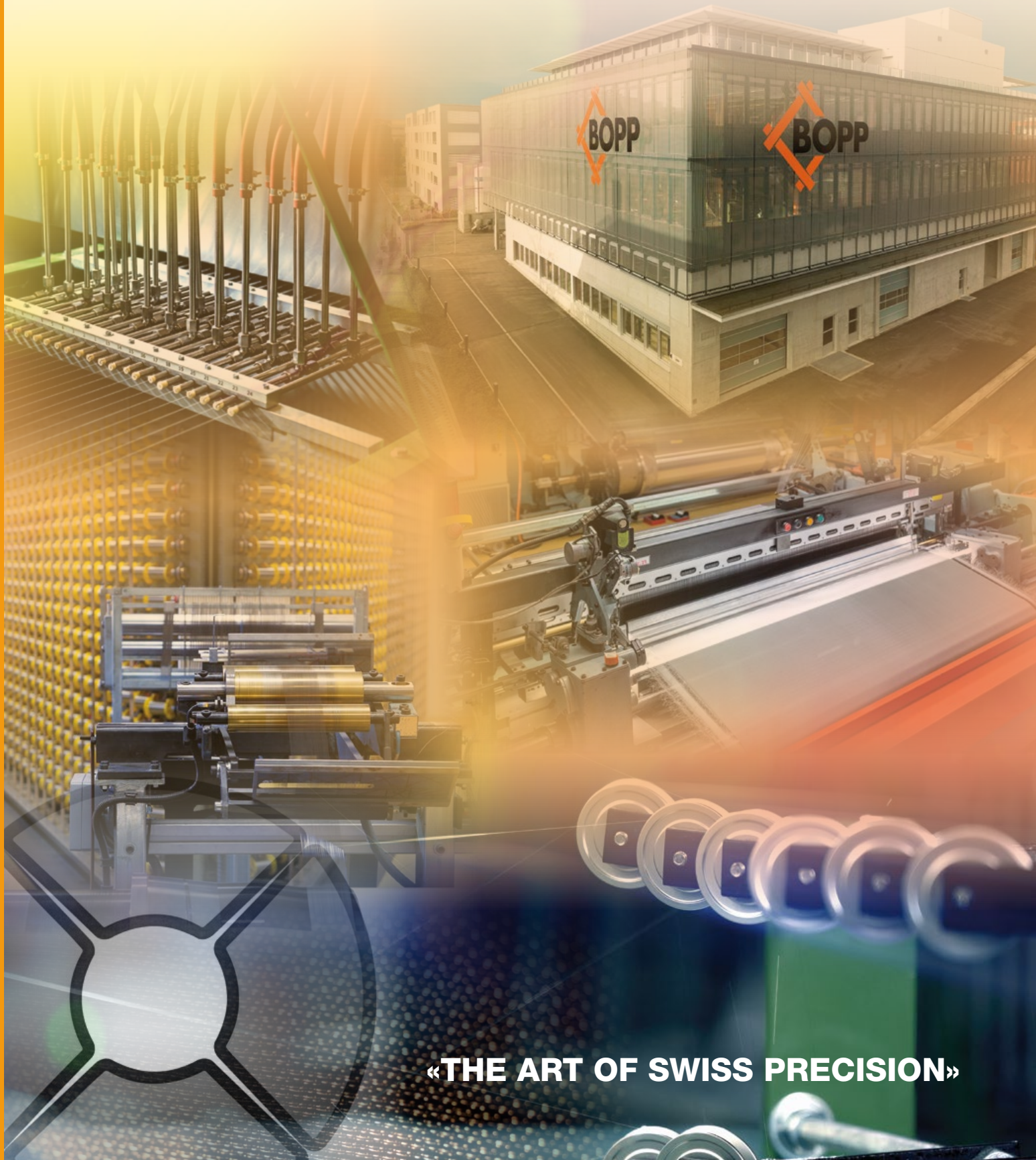


**BOPP**  
The Company



**«THE ART OF SWISS PRECISION»**



## Who we are What makes us special

For decades, G. BOPP + Co. AG has been one of world's leading manufacturers of precision woven wire meshes for diverse and demanding applications. Our high tech products operate under the most challenging conditions. BOPP's speciality is to meet these combined challenges.

### Core competence

BOPP's core competence is the entire valued added process, from drawing fine wires and weaving the finest meshes through to fabricating our meshes into semi-finished goods.

### Solutions providers

Over the years, we have evolved from supplying rolls of mesh to establishing ourselves as providers of solutions. Working closely with our customers, we bring our expertise and knowledge to the table and deliver multiple finished components, ready for integration into the manufacturing chain.

### Quality standards

Maintaining the strictest industry standards in weaving is a matter of course for us. What's more, for each and every industry norm we have created our own internal standards, which in terms of demands and tolerances far surpass the officially accepted values.

### Security

We manufacture in a business-friendly and commercially stable environment. Furthermore, the BOPP Group benefits from multiple production sites, which means we can provide higher levels of process security for the delivery chain.

### Experience

Thanks to our in-house research and development facilities and valued feedback from our customers from different industrial sectors, we can draw on a wealth of experience, which impacts upon both our consultancy work and product development.

### Success is no accident

As Swiss providers of industrial goods with domestic production facilities, we rely on innovative concepts at all levels to remain competitive on an international stage. Our success underlines the strategies we have implemented. We have achieved an above average rate of expansion for many years.

### «THE ART OF SWISS PRECISION»

Our slogan is not an empty promise. We weave our meshes in Appenzell in eastern Switzerland and manufacture to the highest levels of precision at our Head Office in Zürich Affoltern.

*«Using our decades of application experience,  
state of the art production facilities and total commitment,  
we offer the best prerequisite, not just to match  
expectations but to exceed them.»*

*The Board of Directors, BOPP Group*



## Our business model

BOPP supplies to the complete spectrum, from local small businesses through to multinationals across the globe, from prototypes to mass production. Thanks to our business structure, we are agile and flexible.

### Independent

After four generations of ownership by the Bopp family, all company shares have been incorporated into the newly-established «Peter Bopp Foundation for Research and Technology». This move guarantees independence for the BOPP Group into the future.

### Financial resources

BOPP is built on rock solid financial foundations. We cover our financial requirements almost exclusively from our own capital.

### Widely diversified

With meshes used in almost all manufacturing sectors, we are largely unaffected by business cycle fluctuations. Weakening of specific sectors is offset by concurrent periods of strength for others.

### Developed in-house

Our plant and machinery is mostly developed in-house and continuously adapted to meet the highest technological standards. This enables us to achieve above average levels of productivity whilst maintaining the highest quality standards.

### Collective problem solving

You understand your processes, we understand solutions which have worked in comparable situations. We work with you to find the right solution for your process.

### Reproducibility

We ensure a process orientated system from development through to the final phase of production. Thanks to seamless traceability, reproducibility is always guaranteed.

### Strong partnerships

We forge close partnership relationships with our suppliers and service providers. This means we combine their strengths with our own to achieve optimal quality for our customers.

### Availability

As a supplier, availability is a critical issue. This is why we have an average 10,000 rolls of mesh in our central stores and local mesh stores across almost all of our subsidiaries.

### Agile

Our lean and powerful structure enables us to be flexible and fast to respond to changing customer requirements and queries.

### Services

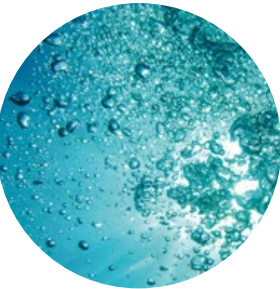
At a consultancy or product level, BOPP provides you with a comprehensive palette of services. In addition, the «renew rather than throw away» approach is close to our hearts.





# We are everywhere

Fine mesh plays a role in almost every production sector worldwide. Our mesh usually has an essential role in processes including filtration, sieving, screening and many more.



- Water filtration**
- Water treatment
  - Microplastics



- Chemicals/Pharma**
- Biotech
  - Chromatography
  - Laboratory equipment



- Electronics**
- Consumer electronics
  - Wearables
  - Printers



- Plastics manufacture**
- Extrusion



- Acoustics**
- Headphones
  - Smartphones
  - Loudspeakers, sound bars



- Food & beverage**
- Drinks industry
  - Food industry



- Automotive industry**
- Fluid filtration
  - Design



- Green tech**
- Fuel cells
  - Solar cells
  - Wind power installations



- Air and space travel**
- Lightning protection
  - Noise reduction
  - Space travel



- Engineering**
- Hydraulics
  - Precision mechanics



- Screening**
- Electromagnetic fields
  - Lightning protection



- Raw material extraction**
- Mining
  - Sieving



- Aeration**
- Silos
  - Powder processing



- Shipping**
- Ballast water
  - Fuel filtration



- Screen printing**
- Displays
  - Glass printing
  - Electronic components



- Design**
- Architecture

and many more ...



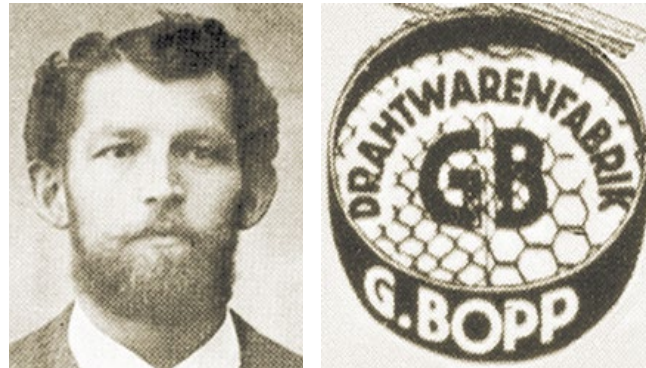


## In business since 1881

Established in an era before lightbulbs, cars, aeroplanes or other modern conveniences, the raw material for our products remains the same; wire. Although today it is produced at a fraction of the original diameters.

### Wire industry G. BOPP

Founded as a wire and wire goods factory in Hallau, Switzerland, BOPP originally produced fruit baskets, fish traps and other agricultural products.



### Moving to the developing city

In 1928, the main business relocated to Zürich Affoltern. To the very site where you will find us today, almost 100 years later.



### Change

The products have undergone significant change. In the early days, new markets and sectors were opened up, such as filtration and sieving of various materials. Over time, the products have become finer and finer.

### Opening the weaving hall in Wolfhalden, Appenzell Ausserrhoden

BOPP opened up its new production facility in 1956, in a place where the very history of the art of weaving is deeply rooted – the Appenzell countryside. Weaving has a centuries old tradition in east Swiss Appenzell. These precious silks were recognised and cherished far and wide. From the very beginning, we benefited from the very best skilled workforce.



### The moon landing was a milestone

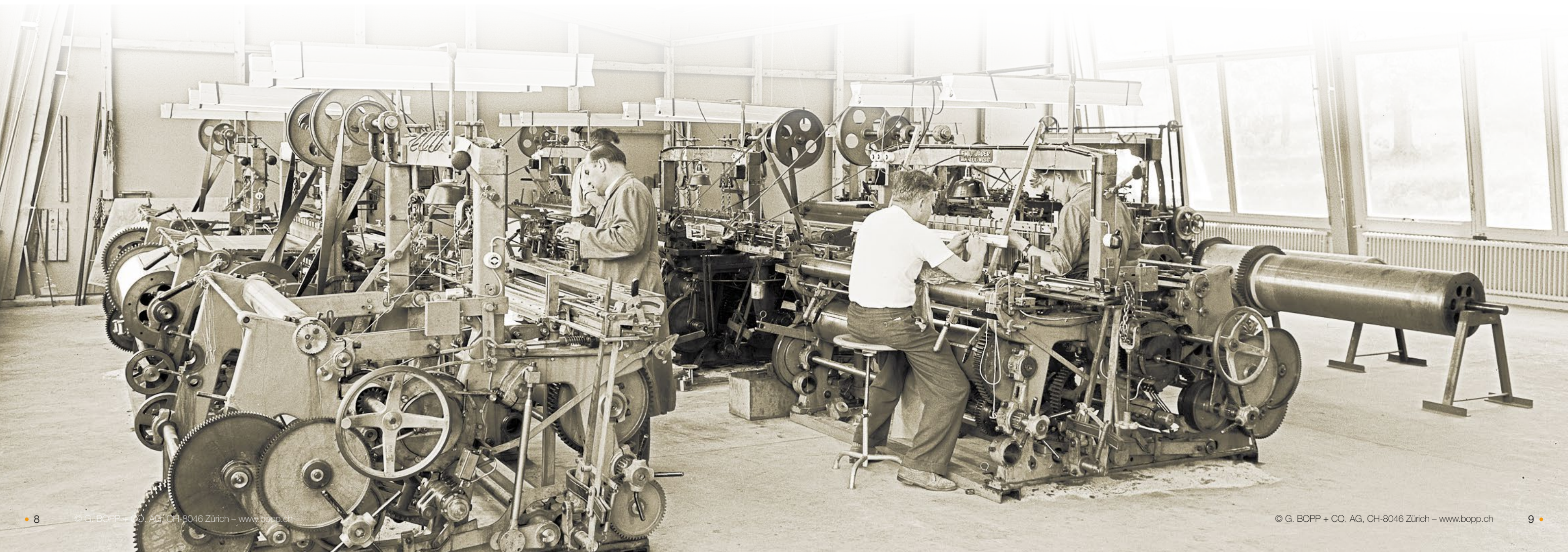
We dedicate the next double page spread to what was probably the greatest transformation in the company's history.

### Globalisation

In order to best serve growing markets around the world, we opened up our overseas subsidiaries. We are now represented by our own companies in Germany, Italy, the UK, Sweden, the USA, Korea and China, and have a worldwide network of agents and representatives.

### Integration of Spörl KG into the BOPP Group

In 2018, the family-owned German company Spörl KG was integrated into G. BOPP + Co. Employing around 180 people, Spörl is by far the largest overseas subsidiary of the BOPP Group. With the German production facility Sigmaringen, we have two weaving mills.





## «IT'S A SMALL STEP FOR A MAN... ONE GIANT LEAP FOR MANKIND»

**And BOPP played a part in this success!**

It all started with a glass of whisky in a New York bar during a business trip. Quite by chance, our proprietor at the time Gerold Bopp met up with the director of the Wintec Corporation, an established filter manufacturer. Over the following decade, we developed special Dutch weave meshes for the Apollo space missions, including specifications which are still part of our range today.

At the end of the development phase, 760 filters housed in 80 different filter modules flew to the moon on board the

Saturn V rocket. Our meshes played an essential role in the launch vehicles and lunar modules, and were even used on the launch pad.

On the Apollo vessel alone there were fuel filters for the response control systems drives, filters for helium, pressure, regulation and control valves, pneumatic filters in the propulsion systems, waste disposal filters, filters to regulate the breathing oxygen, water filters for the environmental control systems and rapid separation filters. On the Saturn V

booster rockets the meshes were used for engine filters in fuel and control valves, Kardan drive shaft filters, filters for liquid oxygen and the pneumatics systems, regulating and hydraulic pump filters in the main engines.

Because of this resounding success, NASA also specified BOPP meshes for the Space Shuttle Programme.

**Our meshes are still being specified for today's space missions**





## From raw wire to finished products

BOPP is one of just a handful of fine wire weavers in the world today. We are unique due to one single fact: we even manufacture the majority of our fine wire ourselves and fabricate our meshes into semi-finished goods.

### Filinox wire drawing

For fine wire weavers, achieving the highest quality wire is fundamental. Our daughter company Filinox means we are the only fine wire weavers in the world with our own in-house wire drawing plant.

At the end of a multi-stage wire drawing process, we produce the finest wire with a diameter of just 13  $\mu\text{m}$  – a quarter of the diameter of the average human hair.

### Finest craftsmanship achieved with state of the art plant and equipment

Preparation for weaving begins with the warping process where individual fine wires are fed neatly onto the warping beam. Up to several tens of thousands of wires make up the width of the beam.



The prepared warping beam goes to the threading department, where with the highest levels of concentration over up to 107 hours of work, the individual wires are threaded into the weaving reed – by hand and to zero tolerance standards!

Finally the threaded warping beam is installed on the weaving machine. Three different types of machine with differing insertion systems are used in order to weave the entire spectrum of our comprehensive product range to the highest quality standards.

### Customer-specific products

Our highly trained team use an extensive selection of work processes to fabricate the meshes with absolute accuracy. They have access to state of the art machinery and equipment.

Meshes are fabricated into finished components to individual customer specifications, ready for integration directly into their manufacturing chains.



## Our products and services

BOPP meshes are the result of intensive research, countless applications in the most diverse sectors of industry and decades of experience. Dependent upon the specification, these are true high-tech products.

### Single-layer meshes

BOPP manufactures a comprehensive range of different mesh types in fine and ultrafine wires made of stainless steel, aluminium, titanium and various alloys. Dependent upon the application, differing weaving styles and mesh designs are specified using different stainless steels and alloys, titanium etc.

### Multi-layer meshes

For challenging filtration applications, numerous layers of mesh can be sintered together into so-called mesh laminates. The properties of the individual laminated mesh types add up to a high-end filtration product. The high strength structure is ideal for harsh industrial conditions, thanks to its stable construction.

### Mesh in roll form or fabricated products

In line with the increasing call for one-stop solutions, we now deliver the majority of our products customized to in-

dividual customer requirements. These mesh sections can then be integrated directly into your production chain. For customers buying rolls of mesh we hold stocks of more than 10,000 rolls.



### Our manufacturing offer

Cut exactly to customer specifications, our specialists prepare the meshes for all conceivable work processes. Using our extensive range of plant and equipment we can carry out precision cutting, stamping, forming, deep drawing, edge binding, bending, welding, glueing, soldering, coating, laser cutting, inscribing and so much more.



### Partnerships

For other further processing requirements, we work with carefully selected partners who subscribe to equivalent high standards of manufacturing.

### Engineering

We make our expertise available to you. We support you in choosing the right materials, component design, optimisation of the best solutions, with design suggestions, cost analyses and much more.

### Logistics

Transport links with our customers must be reliable and cost effective. To meet this challenge, we maintain our own joinery shop for made to measure packing solutions and operate a fully automated warehouse system.



## The people behind BOPP

Our employees are both the heart and backbone of BOPP. They use their professional competence and commitment to meet the needs of our customers each and every day.

### The best employees

Around 480 people around the world are responsible for BOPP's success, 230 located in Switzerland.

### Committed to achievement

Thanks to our specialist expertise, our spirit of innovation and our commitment, we are very successful in what we do. We want to achieve the extraordinary – every day.

### Constant development

Education and training are fundamental in helping us to meet constantly evolving challenges.

### Participation

The best solutions derive from experience. We involve our employees at all stages in projects and developments, maintain an open dialogue and short communication paths.

### Equal opportunities

We make our personnel decisions on the basis of qualifications and achievements. Every position is staffed by the best available candidate.

### Diversity enriches us

As an international business, we value diversity, be it professional, gender specific or cultural.

### We're developing the future

We offer young people an entry into the world of work and develop our skilled teams for tomorrow. Where possible and subject to performance, our apprentices are offered employment following graduation.



Team Head Office Zürich





## Already part of tomorrow's solutions

One key focus for our business is the exciting markets of the future, seeking to mitigate human impact on the environment via technological achievement, without loss of comfort.

### Our contribution

Whether by energy through renewable resources, heat recovery, an economical vehicle fleet or advanced heating systems – BOPP accepts responsibility for a planet worth living for in the future.

### Long term thinking

With a company history which goes back 140 years, it is in our DNA to think long term. For investment in plant and machinery, buildings and people.

### Recyclable

All our metals used can be recycled, which is a clear advantage in terms of sustainability when compared with other filter media.

### Energy saving

Thanks to our meshes achieving high flow rates, the energy requirements of filtration processes can be reduced significantly.

### Long lasting

Metal meshes offer the significant advantage of longevity when compared to any other plastic-based substitution products.

### Sponsored

BOPP participates voluntarily in programmes geared towards climate protection. Our efforts are supervised and sponsored by the Swiss Energy Agency for Industry EnAW.



### Under power

Where possible, we have equipped the roofs of BOPP buildings with solar power installations. At both of our locations in Switzerland, we also make use of the option to obtain any additional electricity we need exclusively from renewable sources.





# Operating worldwide – at home in Switzerland

Our focus is being close to our customers. We believe this is the only way to properly nurture close business relationships. We have subsidiaries around the world and a comprehensive network of agents and representatives.

**BOPP SCANDINAVIA**

- Consultancy
- Local fabrication
- Conveyor belting
- Synthetic meshes
- Mesh stockist



**SPÖRL**

- Consultancy
- Weaving, fabrication
- Mesh stockist



**PRODUCTION BOPP SWITZERLAND**

- Wire drawing
- Weaving



**HEADQUARTERS BOPP SWITZERLAND**

- Consultancy
- Administration & sales
- Fabrication
- Export worldwide

**G. BOPP + CO. AG**

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**BOPP USA**

- Consultancy
- Slitting
- Local fabrication
- Mesh stockist



**BOPP ASIA**

- Consultancy



**BOPP UK**

- Consultancy
- Local fabrication
- Screen printing
- Sieving
- Synthetic meshes
- Mesh stockist



**BOPP ITALY**

- Consultancy
- Slitting
- Local fabrication
- Mesh stockist



**BOPP ASIA**

- Consultancy



• **Representatives/Agents**





## Two suppliers, one Group

After decades of owning shares in the German company Spörl, the business was integrated into the BOPP Group as a wholly owned subsidiary in 2018. This has further strengthened cooperation within the Group – with significant advantages for you.

### Dual sourcing from one provider

We know how important secure supply chains are. This is why we operate a number of production sites. In terms of both our weaving facilities and our manufacturing capabilities, we can offer the same services from different locations within the BOPP Group. Our weaving plants are located in Wolfhalden Switzerland and in Sigmaringendorf Germany, with manufacturing also taking place at our Zurich site. This enables us to maximise supply capacity and minimise any risk of failure. An additional advantage is that you also benefit from the same corporate philosophies and the products are manufactured to exactly the same regulations and standards.



### Sigmaringendorf site

Spörl KG, founded by Gerold Bopp together with Kurt Spörl in 1956, is located in Sigmaringendorf in southern Germany and employs around 180 people. Spörl is by a considerable margin the largest overseas subsidiary in the BOPP Group.

### Market development

Spörl focuses primarily on market development for our German customers.

### Sensible use of synergies

Joint product development, exchange of experience and knowledge, greater buying power – the potential for synergies is significant and will of course be passed on to our customers.

### Shared values

Spörl is bound by the same principles and values as BOPP. We stand for the highest quality standards, a process-oriented approach and dedication to customer service.





