BOPP
High Tech Mesh for Fuel Cell Technology
**BOPP – LEADING IN HIGH TECH MESH**

BOPP is one of the world’s leading producers of precision woven wire meshes. The high quality wire cloths are used worldwide as square weave meshes for sieving and sizing, as stainless steel wire cloth for screen printing, as filter media and laminates as well as support meshes for a wide range of applications. A couple of years ago BOPP started to develop special meshes for applications in the range of electrical engineering focussed on fuel cell and battery technology based on different alloys and mesh designs.

**SWISS COMPANY WITH LONG ESTABLISHED TRADITION FOR EXCELLENCE**

<table>
<thead>
<tr>
<th>Founded:</th>
<th>1881</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidiaries:</td>
<td>Germany, England, Italy, Sweden, USA, China, Korea</td>
</tr>
<tr>
<td>Employees:</td>
<td>200 in Switzerland, 400 worldwide</td>
</tr>
<tr>
<td>Production:</td>
<td>70% of total Output in CH, 85% exported</td>
</tr>
<tr>
<td>Weaving Plant:</td>
<td>140 Machines</td>
</tr>
<tr>
<td>Metal Volume:</td>
<td>170 Tons p.a.</td>
</tr>
<tr>
<td>Wire Threat:</td>
<td>17'500'000 km p.a.</td>
</tr>
<tr>
<td>Mesh manufactured:</td>
<td>340 km p.a.</td>
</tr>
<tr>
<td>Finest Wire woven:</td>
<td>0.015 mm Ø</td>
</tr>
</tbody>
</table>

**BOPP – COMPETENCE IN FABRICATION**

**MECHANICAL UNIT OPERATION**

- CAD controlled fine cutting, mechanical cutting, laser cutting, stamping, drawing and forming, binding, synthetic coating, stretching, spot, roll seam and plasma welding, soldering, calendering

**PROTOTYPES, ONE-OFFS**

- Development of new solutions working closely with customers, “One-offs” produced to meet individual requirements

**THERMAL AND CHEMICAL FINISHING**

- Sintering, tension free bonding, surface treatments, functional coatings

**REPLACEMENT PARTS**

- Reconditioning of wearing parts, exchange of damaged meshes, reverse engineering, modifications to customer specifications, call-off storage and delivery

**OEM PARTS**

- Manufacture of materials and semi-finished goods such as rings, flanges, reinforcements, supports, reconditioning of used components

**EQUIPMENT AND KNOWLEDGE BUILDING**

- Development and production of equipment for demanding applications

**VOLUME PRODUCTION**

- Fully or semi-automated volume production for maximum economy
BOPP – COMPETENCE IN MESH FOR FUEL CELL TECHNOLOGY

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
<th>AISI/UNS</th>
<th>Wire diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4301</td>
<td>X5 Cr Ni 18 10 (V2A)</td>
<td>304</td>
<td>&gt;0.016mm</td>
</tr>
<tr>
<td>1.4306</td>
<td>X5 Cr Ni 18 11</td>
<td>304L</td>
<td>&gt;0.016mm</td>
</tr>
<tr>
<td>1.4401</td>
<td>X5 Cr Ni Mo 17 12 2 (V4A)</td>
<td>316</td>
<td>&gt;0.015mm</td>
</tr>
<tr>
<td>1.4404</td>
<td>X2 Cr Ni Mo 17 12 2</td>
<td>316L</td>
<td>&gt;0.015mm</td>
</tr>
<tr>
<td>1.4841</td>
<td>X10 Cr Ni Si 25 20</td>
<td>314</td>
<td>&gt;0.030mm</td>
</tr>
<tr>
<td>1.4539</td>
<td>X1 Cr Ni Mo Cu 25 20 5</td>
<td>904L</td>
<td>&gt;0.025mm</td>
</tr>
<tr>
<td>1.4760</td>
<td>X1 Cr Ti La 22 (Crofer)</td>
<td>S 44535</td>
<td>&gt;0.120mm</td>
</tr>
<tr>
<td>2.4602</td>
<td>Ni Cr 21 Mo 14 W (Hastelloy C-22)</td>
<td>N 06022</td>
<td>&gt;0.040mm</td>
</tr>
<tr>
<td>2.4856</td>
<td>Ni Cr 22 Mo 9 Nb</td>
<td>N 06625</td>
<td>&gt;0.035mm</td>
</tr>
<tr>
<td>2.4060</td>
<td>Ni 99.6</td>
<td>N 02200</td>
<td>&gt;0.036mm</td>
</tr>
<tr>
<td>2.4066</td>
<td>Ni 99.2</td>
<td>N 02200</td>
<td>&gt;0.036mm</td>
</tr>
<tr>
<td>2.0060</td>
<td>Copper</td>
<td>E-Cu 57</td>
<td>&gt;0.030mm</td>
</tr>
<tr>
<td>3.3555</td>
<td>Aluminium</td>
<td>Al Mg 5</td>
<td>&gt;0.036mm</td>
</tr>
</tbody>
</table>

Other alloys on request

BOPP – COMPETENCE IN MESH FOR FUEL CELL TECHNOLOGY

- **COMMON MESHES:**
  - Square weave wire cloth
  - Rectangular weave wire cloth
  - Twilled Dutch weave
  - Twilled Dutch single weave
  - Sintered multilayer laminates

- **COMMON TREATMENTS:**
  - Heat treatment
  - Calendering
  - Coating

- **COMMON MANUFACTURING:**
  - Slitting
  - Die cutting
  - Customized quality control

- **COMMON COMMERCIAL AGREEMENTS:**
  - Development contracts
  - Non-disclosure agreements
  - Call off contracts

BOPP – COMPETENCE IN APPLICATIONS
The BOPP Group

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