Wedge wire screens & tubes
Solutions for technical screens and sieves

Pro - SLOT®
Progress Eco

Progress Eco is a producer of industrial sieves and related products, including centrifuge baskets, filter elements, and other appliances. Since 1982 we provide products for mechanical filtration, separation, dehydration, and classification processes in many branches of the industry. Our comprehensive programme, state-of-the-art and advanced machinery stock, as well as technical advisory, and services support guarantee providing only the best solutions regardless of their application or work parameters.

Progress Eco employs over 200 workers, has 3 production plants in Poland, owns companies in Germany and the Czech Republic, as well as an expanded network of sales offices and merchants in Europe and worldwide.

The best quality is certified by international standards, patents, and utility models for products in offer.

Wedge wire Pro-SLOT®

Welded Pro-SLOT® slotted sieves are the main and the most technologically advanced line of our products. They are reliable for using in numerous filtration processes for solid and liquid particles. We manufacture them from profiled wires of high quality stainless and acid-proof steel. The technology of electrofusion used for joining profiled wires for a set of supporting rods lets us obtain extremely precise dimensions of apertures.

They work extremely well both in static structures, as well as dynamic ones, providing optimal effectiveness of a process even in tough and aggressive work environment. Depending on individual applications, our company offers flat welded or round welded sieves of different size and shape, types of fittings, with a possibility to join individual elements into larger segments.

Characteristics of Pro-SLOT® wedge wire screens

Extended lifetime
- Slot does not change during abrasive operation on the screen surface

Increased efficiency
- Capability to withstand heavy loads
- High open area
- No clogging
- Perfectly smooth and flat surface
- High precision of execution
- Increased capacity and more precise separation, dewatering and filtration
- Self-cleaning effect
- Low pressure loss

High open area and strength parameter
- Proper size of profile wire
- Proper size of structural support wire
- Profile shape of working wires [type Sb, Sbb or special wires]

Increased economical effectiveness, lower cost
- Higher efficiency
- Permanence of exploited resources
- Reduced maintenance cost
APPLICATION

Gas and oil industries
Production of fuel and lubricants
Desulphurization
Drying of natural gas
Regeneration of catalysts
Catalytic reactors
Protection of fittings and compressors

Chemical industry
Processing of paint and coating
Processing of chemicals
Processing of polymers
Purification of potassium
Purification of phosphates

Mining
Coal enrichment

Food industry
Extraction
Fluidized beds
Absorption
Adsorption
Sorting
Drying

Paper
Coating
Blending
Dewatering
Refining

Water process
Municipal drinking water treatment
Waste water treatment
Industrial water treatment
Ion exchanger
Desalination of seawater
Irrigation

Mineral and aggregate processing
Exploitation of water
Exploitation of crude oil
Exploitation of natural gas
Recycling
Flat panels of wedge wire screens are manufactured by welding special profiled working wires to support wires at an angle of 90 degrees.

A precise slot is received by means of applying modern welding technology between working wires and support wires. The result is a rigid screen construction with the capability of withstanding heavy loads.

Slot: from 0.05 mm
Maximum size: 3500 x 4000 mm
Profile tilt: 0°-10°

Standard tolerances*:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>± mm</th>
<th>± mm</th>
<th>± mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length and width</td>
<td>± 2 mm</td>
<td>± 3 mm</td>
<td>± 4 mm</td>
</tr>
<tr>
<td>Slot opening</td>
<td>± 0.050 mm max. deviation ± 0.100 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen height</td>
<td>± 0.3 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagonal</td>
<td>± 2 mm</td>
<td>± 3 mm</td>
<td>± 4 mm</td>
</tr>
<tr>
<td>Slot opening</td>
<td>± 0.050 mm max. deviation ± 0.100 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flatness</td>
<td>± 0.0 mm/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Straightness</td>
<td>± 0.0 mm/m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Different set of tolerances needs individual agreement.

Open area

An important parameter of the screen is the open area. Open area Fo(%) is the relation of the slot surface to the total screen surface. Open area is calculated according to the following formula:

\[ F_o = \frac{S}{S+A} \times 100\% \]

A – width of the working wire (according to the table of working wires)
S – slot size

For example:
A sieve was made of working wire Sb 28 with slot s = 0.24 mm

\[ F_o = \frac{0.24}{(0.24+2.2)} \times 100\% = 9.6\% \]
**CYLINDRICAL SCREENS**

**Slot**: from 0.02 mm

**Maximum length**: 6000 mm

**Standard tolerances**: |
<table>
<thead>
<tr>
<th>Diameter</th>
<th>Slot opening</th>
<th>Screen height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø ≤ 300 mm</td>
<td>± 0.10 mm</td>
<td>± 0.4 mm</td>
</tr>
<tr>
<td>Ø &gt; 300 mm</td>
<td>± 0.15 mm</td>
<td>± 0.4 mm</td>
</tr>
</tbody>
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<tr>
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<td>± 0.15 mm</td>
<td>± 0.4 mm</td>
</tr>
</tbody>
</table>

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**Cylindrical screens** are received by simultaneously winding a spiral of profiled working wire and welding them to support wires, which are arranged along the axis of the cylindrical construction. This technology allows to provide welded profile wire screens for applications where high precision of the screen together with high strength is required.

Thanks to the newest welding technology we can provide:
- optional distance between support wires
- very precise and repeatable slot
- screens in accordance to special requests of our clients

**OZ** - circumferential slot, flow from outside to inside (FOTI)

**OZR** - circumferential slot, flow from inside to outside (FITO)

**RW** - slot parallel to the axis, flow from inside to outside (FITO)
**Working profiles**

<table>
<thead>
<tr>
<th>Type</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C(°)</th>
<th>β(°)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type Sb</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sb 6</td>
<td>0.50</td>
<td>1.20</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Sb 8</td>
<td>0.60</td>
<td>1.20</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Sb 10</td>
<td>0.75</td>
<td>1.30</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sb 12</td>
<td>1.00</td>
<td>2.00</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sb 18</td>
<td>1.50</td>
<td>2.50</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Sb 22</td>
<td>1.80</td>
<td>3.70</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Sb 28</td>
<td>2.20</td>
<td>4.50</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Sb 34</td>
<td>2.80</td>
<td>5.00</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Sb 42</td>
<td>3.40</td>
<td>6.50</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Sb 60</td>
<td>4.00</td>
<td>9.00</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Sb 70</td>
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<td>10.00</td>
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<td></td>
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<tr>
<td>SbA 50</td>
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<td>6.00</td>
<td>40</td>
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<tr>
<td>Sb 55*</td>
<td>5.00</td>
<td>5.50</td>
<td>6</td>
<td></td>
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</tbody>
</table>

Other dimensions available on a special request

**Special working wires** separate highly abrasive materials. During their service the slot size does not increase considerably along with the abrasion of working surface. They are ideal for cylinder and conical sieves used in vibrating centrifuges. They increase the sieve’s life span together with preventing clogging.

**Support profiles**

<table>
<thead>
<tr>
<th>Type</th>
<th>A (mm)</th>
<th>B (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type I</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I 10 x 3</td>
<td>3.00</td>
<td>10.00</td>
</tr>
<tr>
<td>I 10 x 2</td>
<td>2.00</td>
<td>10.00</td>
</tr>
<tr>
<td>I 12 x 3</td>
<td>3.00</td>
<td>12.00</td>
</tr>
<tr>
<td>I 15 x 3</td>
<td>3.00</td>
<td>15.00</td>
</tr>
<tr>
<td>I 18 x 2</td>
<td>2.00</td>
<td>18.00</td>
</tr>
<tr>
<td>I 20 x 2</td>
<td>2.00</td>
<td>20.00</td>
</tr>
<tr>
<td>I 30 x 2</td>
<td>2.00</td>
<td>30.00</td>
</tr>
<tr>
<td>I 36 x 3</td>
<td>3.00</td>
<td>36.00</td>
</tr>
</tbody>
</table>

Other dimensions available on a special request

**Type Q**

| Q 25  | 2.00 | 3.00 |
| Q 35  | 3.00 | 5.00 |
| Q 55  | 4.00 | 8.00 |

Other dimensions available on a special request

**Type D**

| D 45  | 3.8  | 5.6  |

Other dimensions available on a special request

**Standard materials**

<table>
<thead>
<tr>
<th>Structure</th>
<th>DIN</th>
<th>AISI/ASTM</th>
<th>UNI/DIN</th>
<th>BS</th>
<th>Anfor</th>
<th>Branding</th>
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<tbody>
<tr>
<td>Ferrite</td>
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<td>430</td>
<td>X8 Cr 17</td>
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<tr>
<td>Austenite</td>
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<td>304</td>
<td>X5 CrNi 1810</td>
<td>304 S 15</td>
<td>Z 6 CN 18.09</td>
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<td></td>
<td>1.4307</td>
<td>304 L</td>
<td>X2 CrNi 1811</td>
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<tr>
<td></td>
<td>1.4373</td>
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<tr>
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<td>316</td>
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<td></td>
<td>1.4404</td>
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<tr>
<td></td>
<td>1.4439</td>
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<tr>
<td></td>
<td>1.4539</td>
<td>904 L</td>
<td>X1 NiCrMoCuN 25205</td>
<td>S 31254</td>
<td>Z 1 NCDU 25.20</td>
<td>SMO 904</td>
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<tr>
<td></td>
<td>1.4541</td>
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<td>X6 CrNiTi 1811</td>
<td>321 S 12</td>
<td>Z 6 CNT 18.10</td>
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<tr>
<td></td>
<td>1.4571</td>
<td>316 Ti</td>
<td>X6 CrNiMoTi 1712</td>
<td>320 S 31</td>
<td>Z 6 CNT 17.12</td>
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<tr>
<td>Duplex</td>
<td>1.4462</td>
<td>329 LN</td>
<td>X2 CrNiMoN 2253</td>
<td>S32205</td>
<td>Z 2 CND 22.05 Az</td>
<td>SAF 2205</td>
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<td></td>
<td>1.4410</td>
<td>439</td>
<td>X2 CrNiMoN 2574</td>
<td>S32750</td>
<td>Z 3 CND 25.07 Az</td>
<td>SAF 2507</td>
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<tr>
<td>Others</td>
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<td>NiCu 30 FE</td>
<td>-</td>
<td>-</td>
<td>Monel 400</td>
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<tr>
<td></td>
<td>2.4810</td>
<td>NiMo 16 Cr 16 Ti</td>
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<td>-</td>
<td>Hastelloy C4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4816</td>
<td>NiCr 15 Fe</td>
<td>-</td>
<td>-</td>
<td>Inconel 600</td>
<td></td>
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<tr>
<td>Carbon steel*</td>
<td>1.0038</td>
<td>A570 Gr 30</td>
<td>-</td>
<td>Fe 380 B FU</td>
<td>E 24 - 2NE</td>
<td>-</td>
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<tr>
<td></td>
<td>1.0570</td>
<td>A572 Gr 50</td>
<td>-</td>
<td>Fe 510 D1 FF</td>
<td>E 36 - 3</td>
<td>-</td>
</tr>
</tbody>
</table>

* Available finishes: galvanized steel, Pro-Zinal (ZnAl), varnished steel
** Execution in other steel grades requires individual arrangement.
Flat sieves
Flat sieves are flat panels of welded profile wire, fixed to a frame and adapted to assembly. Depending on the kind of application, flat sieves can be divided into:
- **Sieves working in dynamic systems**
  - panels to be incorporated in vibrating sieves
  - special reinforcement depending on the sieve load is necessary
  - special finishing to guarantee secure, long working time, and proper fixing of the sieve to the application frame
- **Sieves working in static systems**
  - do not require any special reinforcements,
  - can work as bottoms and decks in tanks and storage reservoirs and sumps.

Arch sieves
Arch sieves are mainly used for dewatering and separation of solid particles from liquids. Depending on the application character, they can be divided into arch sieves with gravitational loading or arch sieves with pressured loading.

**The application of arch sieve provides:**
- uniform flow onto the sieve (usage of the whole sieve surface)
- high speed of flow onto the sieve
- increased classification effectiveness and efficiency (due to the possibility of applying the working wire at a defined angle relative to support wire).

Gutter sieves
Gutter sieves are used as bottoms of screw conveyors, where in addition dewatering or separation is required apart from transportation.

Conical sieves, baskets
Conical sieves and conical baskets are mainly used in centrifuges. They can be divided in two categories depending on their work character:
- **Working in dynamic system**
  - for all kinds of centrifuges,
  - with self-supporting structure consisting of ribs, rings, flanges which constitute an integral part of the sieve construction. After a period of exploitation the whole basket has to be replaced:
    - without the supporting structure
    - as screening insert for non-disposable structural frames. The only thing to be replaced is the screen insert.
- **Working in static systems - centrifugal dewatering screens**
  - filter cartridges
  - filter elements for pipelines.

Others
Available on request
**Wedge wire screens**
- Slot: from 0.05 mm (50 micrometer)
- Max. size: 3500 x 4000 mm
- Material: stainless steel, carbon steel
- Wire: standard wire S6 type, special wire S6b type

**Wedge wire tubes**
- Slot: from 0.02 mm (20 micrometer)
- Max. length: 6000 mm
- Material: stainless steel
- Internal and external flow

**Tytan pressure welded screens**
- Aperture: 70 - 200 mm
- Ø wire: 4.0 - 22.0 mm (simple, pressed, profiled HT i GZ)
- Width max. 1500 mm; Length - according to requirements
- Material: manganese steel (patent), stainless steel

**Fine wire mesh**
- Mesh: from 0.02 mm
- Type: simple weave (plain) and oblique wave screens
- Maximum width: 4000 mm
- Maximum length: 20000 mm

**Woven wire screens**
- Mesh: 1.0 - 100 mm
- Ø wire: 0.8 - 6.3 mm
- Material: spring/stainless/carbon steel, aluminum
- Available finishes: galvanized steel, Pro-ZINAL (ZnAl), varnished steel
- Maximum width: 4000 mm

**Flat top wire screen**
- Mesh: 4.0 - 150 mm (square-shaped mesh)
- Ø wire: 1.6 - 12.0 mm
- Material: spring steel, stainless steel, carbon steel, aluminum
- Available finishes: galvanized steel, varnished steel

**Piano wire screens**
- Slot: 1.2 - 55.0 mm
- Ø wire: 0.8 - 8.0 mm
- Polyurethane and rubber lacings
- Maximum width: 2000 mm
- Sheets with catches for longitudinal tension

**Polyurethane screen-modular**
- System: ProLINE, ProCLEAT, ProCUN, ProSTEP, ProDECK
- Aperture: 0.25 - 160 mm
- Thickness: 30 - 60 mm
- Standard: 300 x 1000 mm
- Polyurethane: 45-95°ShA

**Polyurethane screen-tensioned**
- System: ProFALC, ProMAT
- Aperture: 11 - 160 mm
- Thickness: 10 - 60 mm
- Max. dimensions: 1900 x 3000 mm
- Polyurethane: 45-95°ShA

**Certificates**

Our team consists of experienced engineers and craftsmen with qualifications confirmed by European certification.

We apply a controlling system which is in accordance with procedures and instructions of the holding certificate of **Quality Management System ISO 9001**.

**The Quality Management System:**
is applicable to: design and manufacturing of welded profile wire screens, perforated screens, wire cloths, harped screens, polyurethane screens and products and devices with their application designed for process industry. Design and manufacture of machines, equipments, tanks and pressure vessels and process pipework. Manufacture of products using water–jet method.

**Progress Eco Sp. z o.o. sp.k.**
Dobrów 7, 28-142 Tuczępy, Poland

**International Sales** Working hours: Monday - Friday / 8:00-16:00 UTC+1
T: +48 41 346 50 06 (ext. 120) F: +48 41 346 50 08 E: sales@progress-screens.com

[www.progress-screens.com](http://www.progress-screens.com)