Versatile, durable, easily cleanable sintered stainless steel wire mesh laminates for gas, liquid, and polymer filtration
MKI’s TWM five-layer filter media are constructed using our unique calendaring and sintering (diffusion-bonding) process to laminate layers of woven stainless steel wire cloth. This creates an integrated yet porous plate, and completely eliminates media migration. The particle size retention (i.e., micron rating) is governed by the choice of filter mesh; the other four layers (see diagram) are carefully chosen to protect the filter layer and to maximize strength and permeability. TWM is manufactured to a final thickness of 1.66 mm (0.065”); if a thicker plate is required, additional layers of support mesh can easily be added. In addition to being precoat compatible, the barrier-type filtration design means that contaminants are collected near the surface of the filter, providing high filtration accuracy and complete cleanability via onstream backwashing. Unlike depth-type filtration media such as sintered powder or fiber, which suffer internal clogging and reduced permeability, the long-term reusability of TWM media means lower replacement costs and less downtime for your process, even in the most demanding applications.

**Superior Features of TWM include:**

- **Wide Filtration Range**
  Eight standard filtration ratings available, ranging from 2µ (microns) up to 100µ. TWM media with nominal filtration ratings of 150µ and 200µ are available on special order.

- **Material**
  Construction of mixed AISI types 304 and 316 stainless steel is standard. All 304L or 316L stainless steel, Hastelloys, Monel and other materials available on special order.

- **Strength and Durability**
  High strength and durability due to high temperature diffusion-bonding results in abrasion resistance, no delamination, and longer usable lifetime in rugged high pressure or high viscosity environments.

- **Corrosion and Oxidation Resistance**
  Superior, equalling the parent material. Specific corrosive environments can be accommodated on special order.

- **High Operating Temperature**
  Our standard 300-series stainless steel filter media withstand up to 1000°F for continuous operation, or 1200°F intermittently. Higher temperature alloys can be substituted on special order.

- **Cleanability**
  Fully cleanable via standard methods, including onstream backpulsing, ultrasonic or high pressure jet water cleaning, chemical processing, and high temperature hydrogen furnace heat treating. Extensive reusability results in lower replacement costs and less downtime.

- **Fabrication**
  TWM is easily formed, sheared, punched, and riveted. Excellent weldability using the TIG, MIG, or electron beam methods. May also be laser cut or electrical discharge machined.

- **Size and Availability**
  From stock in sheets 24 x 48” (610 x 1220mm) and 36 x 36” (915 x 915mm). Larger sized butt-welded sheets, blanked shapes, trimmed sizes, filter elements, and custom fabrications are available on special order. MKI has the fastest delivery time, so you are up and running sooner.

- **Alternate Construction Optional**
  MKI also manufactures SWM™ five-layer filter media, which have a thicker surface mesh that protects the filter layer more during forming. SWM is approximately 80% more permeable to air than the equivalent grade of TWM, and is excellent for use in, for example, medium to large diameter filter elements. SWM media is processed to a final thickness of 0.079” (2mm), and is available in the same nominal grades as TWM. For more information, see MKI’s SWM™ Filter Element brochure.

- **Manufacturing Quality**
  TWM is produced in accordance with MKI’s exacting manufacturing standards. With over 40 years experience in the sintering of woven mesh laminates, Martin Kurz & Co. is a recognized market leader in the production of porous metallic media. We are committed to providing you with not only the highest quality product, but also expert customer service, fast delivery times, and competitive pricing.
Technical Data

Typical TWM Air Flow Data

Air flow (Liters/min/cm²)

<table>
<thead>
<tr>
<th>Filter Mesh (microns)</th>
<th>Mean Pore (microns)</th>
<th>Filtration Ratings (microns)</th>
<th>Flow Rates at ( \Delta P = 1 ) psi (6.895 kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Liquid Filtrates</td>
<td>Gas Filtrates</td>
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<tr>
<td></td>
<td></td>
<td>98% Removal ²</td>
<td>Absolute ³</td>
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<tr>
<td>2 325 x 2300</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>5 200 x 1400</td>
<td>10</td>
<td>5</td>
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<tr>
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<tr>
<td>100 150 x 150</td>
<td>104</td>
<td>100</td>
<td>120</td>
</tr>
</tbody>
</table>

Notes:
1. For Dutch twill weaves, mean pore is determined by bubble point testing; for square weaves, number given is the calculated opening size.
2. 98% by weight of all particles larger than the rated size are removed.
3. Determined by bubble point and glass bead tests.
4. Conversion factors: 1 SCFM/ft² = 7.48052 GPM/ft² = 0.03048 LPM/cm²
5. Oil is MIL-H-5606, 11.7 cP viscosity at 100°F.

Maximum and actual values for flow rate and pressure drop will vary with specific end user application, due to widely varying viscosities of different gas, liquid, and polymer filtrates, as well as the final shape and size of the filter plate or element. Because of these factors, MKI cannot guarantee the suitability of the media for any particular application. We strongly recommend that the end user test under desired operating conditions before installation.

• When ordering, please specify Nominal Grade, sheet size, and alloy.
Suggested Applications

- Chemical Process Filtration
- Polymer Filtration
- Pharmaceutical Manufacturing
- Food and Beverage Production
- Prefilter or Support for Reverse Osmosis Filter Membranes
- Lubricant Filtration
- Hot Gas / Dust Filtration
- Pressure / Flow Homogenization
- Uniform Particle Mixing
- Gas Spargers / Diffusers
- Acoustic Mufflers
- Flame Arresters

WARRANTY NOTE: MKI makes no warranties, express or implied, regarding the information herein or the products described herein. Application suitability must be determined by the end user of the products prior to purchase.