MATERIALS & PROCESS CONDITIONS

Sintered Mesh Element Selection Guide

Define the medium, temperature and cleaning process before selecting the alloy, rating and connection. This guide supports configuration discussions; it does not replace a model-specific datasheet.

Bonded mesh layers combine support, flow distribution and particle retention. Consider this construction when stable layers and cleaning for reuse matter.

304

General corrosion resistance

EN 1.4301 / UNS S30400

Cr-Ni austenitic stainless steel. Typical chemistry: Cr 18.1%, Ni 8.1%.

When to consider it

- General filter components in milder corrosive conditions.
- An option for food-processing equipment.

Selection considerations

Chloride-bearing media can cause pitting or crevice corrosion. Assess cleaning-agent chemistry, concentration, temperature and contact time.

316L

Increased corrosion resistance

EN 1.4404 / UNS S31603

Low-carbon Cr-Ni-Mo austenitic stainless steel. Typical chemistry: Mo 2.1%, C 0.02%.

When to consider it

- For increased corrosion demands and resistance to intergranular corrosion after welding.
- An option for food, pharmaceutical and chemical equipment.

Selection considerations

Assess corrosion risk in chloride-bearing conditions. For CIP or sterilisation, also check the medium, temperature, duration and seal compatibility.

Check corrosion conditions for chlorides and CIP

Specify chloride or cleaning-agent chemistry, concentration, temperature and contact time. Assess 316L and the seals against the actual duty.

Chemistry values are published typical mass fractions for comparison. Delivered material and specifications follow the agreed configuration. Outokumpu 304 · Outokumpu 316L

Filtration Grades & Connection References

Micron-grade reference · length conversion

Example nominal grade	Equivalent length in mm
5 µm	0.005 mm
10 µm	0.010 mm
20 µm	0.020 mm
40 µm	0.040 mm
100 µm	0.100 mm

Published media-grade examples; not a shared rating for all illustrated elements.

Example grades from published sintered-mesh data, not a common rating for every element shown. Unit conversion does not define removal efficiency; identify nominal/absolute rating, test method and target particles. Grade reference ↗

Clamp ferrule reference · ISO 2852 examples

Catalogue size (mm)	Tube OD / ID (mm)	Ferrule OD A (mm)
25.00	25.60 / 22.60	50.50
38.00	38.60 / 35.60	50.50
51.00	51.60 / 48.60	64.00

Published ferrule dimensions for reference; not measured dimensions of the illustrated filters.

These three Alfa Laval ferrule examples distinguish ferrule diameter from tube bore; they are not dimensions of the illustrated elements. A 50.50 mm ferrule can have different bores. KF vacuum connections require their own interface specification. Ferrule dimensional reference ↗

> **Define pressure, differential pressure and temperature separately**
>
> A micron rating does not define flow capacity. Area, viscosity, loading and differential pressure matter. Temperature selection also includes the end connection, joints and seals.

Media Comparison & Inquiry Checklist

Media and geometry · selection comparison

Filter type	Construction	Typical duties	Trade-offs
Single-layer woven mesh	One woven screen	Sieving, prefiltration and particle retention	Fine screens or higher differential pressures need support; rating depends on weave and opening.
Multilayer sintered mesh	Bonded mesh layers	Powder venting, gas/liquid duties and cleanable elements	Assess flow resistance against grade, layer arrangement and effective area.
Sintered metal-fibre felt	A sintered three-dimensional fibre network	High dirt-loading duties and liquid depth filtration	Deposits within the medium require a suitable cleaning process.
Pleated metal element	Pleated mesh or fibre media	More filtering area in a limited envelope	Assess pleat deposits and cleaning for sticky or caking powders.

Featured construction: multilayer sintered mesh

For powder and gas duties where stable mesh layers and repeated cleaning matter, consider sintered mesh first. Match the configuration to particle size, flow and differential pressure.

Sintered mesh and fibre felt describe media; pleating describes geometry. These are not mutually exclusive categories. This is a design guide, not a measured performance ranking. Mesh reference ↗ · Metal-fibre reference ↗

Prepare these details for selection

- Medium / target particles
- Temperature / cleaning
- Flow / viscosity
- Pressure / allowable differential
- Dimensions / connection
- Quantity / sample test duty

Technical discussion / sample requests

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