

HJS Sintered Metal Filter (SMF®)

Tube Element Catalogue



Innovation through Experience

HJS Emission Technology

HJS Emission Technology stands for more than 45 years experience in environmental technologies and is making a significant contribution to meeting latest emission standards and climate targets worldwide. Our mission is clean air. Integrity and sustainability are the main supports of our commercial action.

HJS is an industry leader providing expertise and solutions in the field of exhaust-gas aftertreatment and industrial filtration technologies. We are certified OEM manufacture and development partner for mobility, drive line and filtration concepts. We have a wide-ranging patent portfolio for the manufacturing of sintered metal filter media (SMF®) in the area of liquid and gas filtration.

Our innovative customized upgrade solutions are ideal designed for long lasting application and challenging requirements.



Sintered Metal Filter Media - SMF®

SMF® material is a high porous, thin sintered metal in which a precisely defined stainless steel powder forms the pore structure, is sintered and supported by an expanded metal

carrier responsible for the required strength. This results in a mechanically and thermally highly stable filter medium with the properties of the three available porosities.

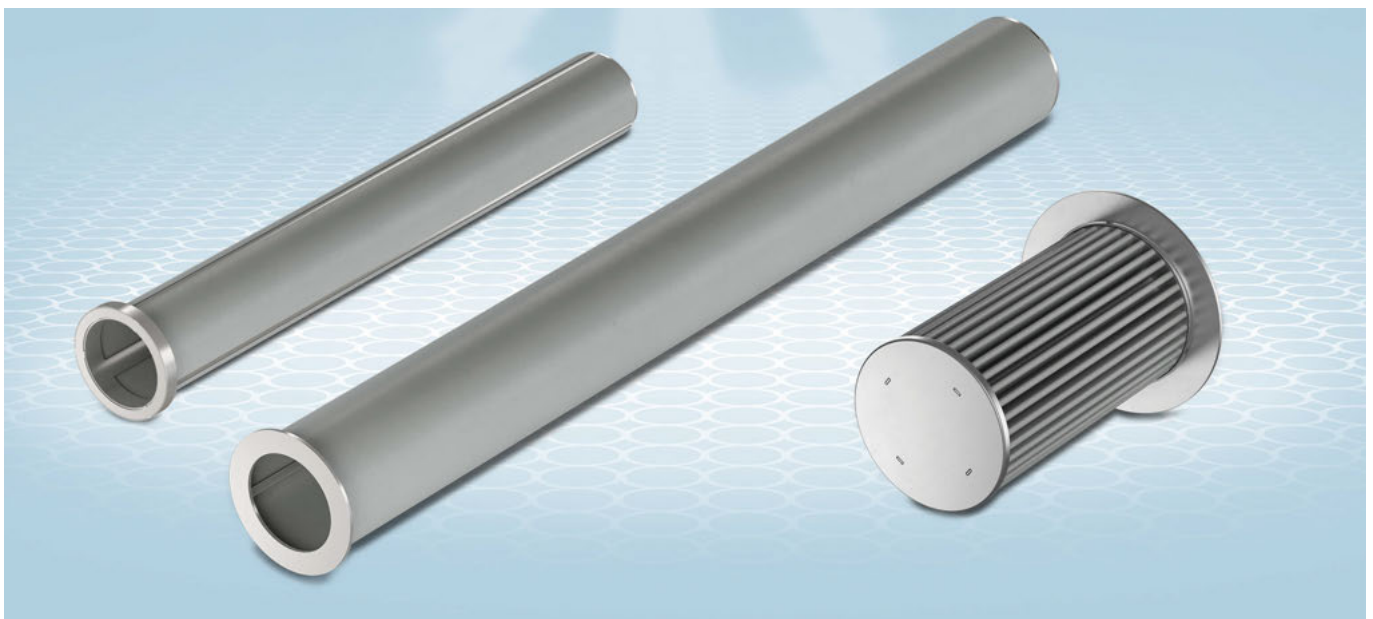
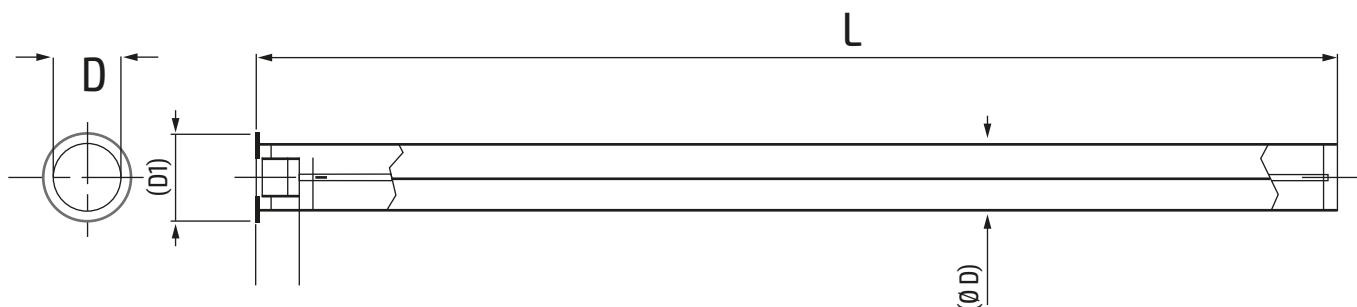
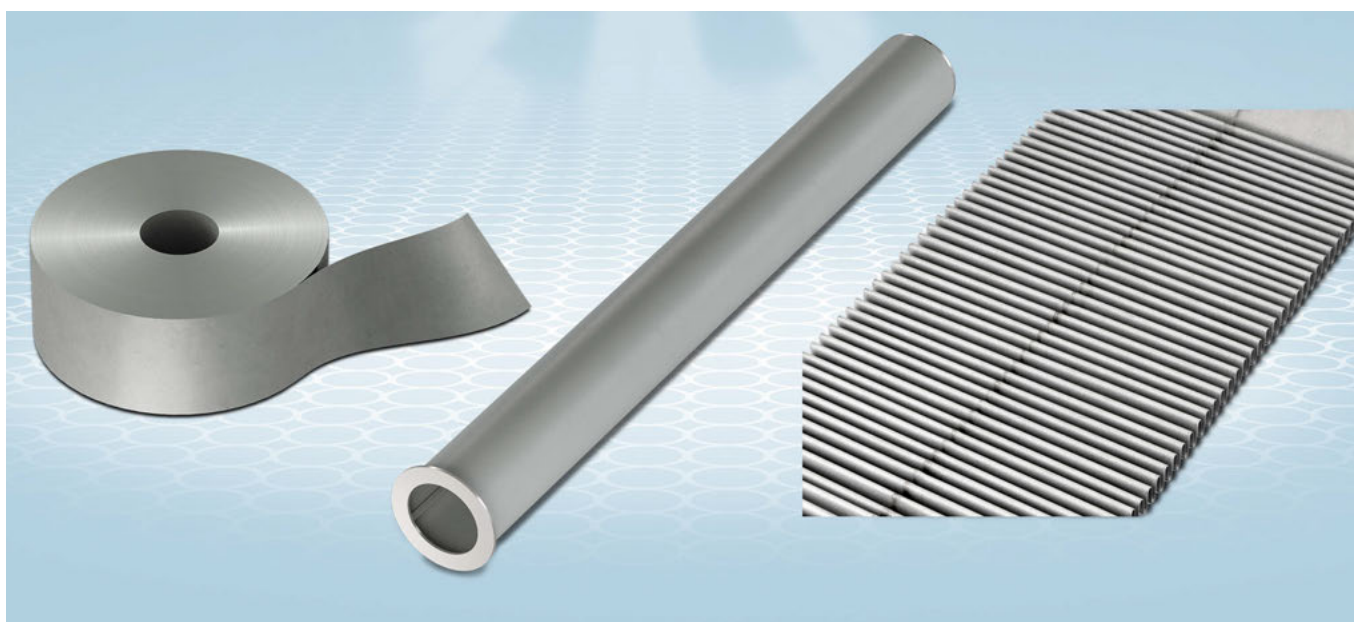


Table of standard Filter-Tubes SMF®-10 and SMF®-20



Diameter (D)	mm	55	77	97	116	155	155	194
Length* (L) up to	mm	1,000	1,500	1,500	1,500	2,500	3,000	3,000
Diameter flange (D1)	mm	75	100	125	150	200	200	250
Material thickness flange	mm	3	3	4	4	5	5	6
Filtration surface	m ²	0.17	0.36	0.45	0.55	1.46	1.46	1.83
Weight	kg	0.29	0.60	0.75	0.90	2.41	2.41	3.02
Article No. SMF®-10		93 80 5510	93 80 7715	93 80 9715	93 60 1115	93 80 000	93 80 1530	93 80 1930
Article No. SMF®-20		93 80 5511	93 80 7715	93 80 9715	93 60 1115	93 80 000	93 80 1530	93 80 1930

* For longer Filter-Tubes, elements can be coupled



Technical Specification

Physical Parameters

Parameter	Unit	Values SMF-10	Values SMF-20	Values SMF-30
Weight	g/m ²	1,650	1,725	1,825
Thickness	mm	0.38	0.41	0.44
Porosity	%	45	48	51
Air permeability @ ¹ 200 Pa	l/dm ² min	20	82	137
Max. Pore size ²	µm	16	38	50
Mean Flow Pore Size ²	µm	13	27	33
Min. Pore size ²	µm	12	22	26
Conductivity @ 20 °C	S/m	0.5 x 10 ⁶	0.5 x 10 ⁶	0.5 x 10 ⁶
Tensile strength (R _{p0.2})	MPa (x/y)	25 / 36	15 / 35	14 / 33

¹ISO 4022 ²ASTM D6767 (Capillary Flow Test w. IPA)

Filtration Efficiency

Tests according to VDI 3926 and ISO 16890 standards, using 125 mm diameter flat sheet probes, show a F9 filtration efficiency. (according to old EN 779)

Parameter	Unit	Values SMF-10	Values SMF-20	Values SMF-30	Test Method
Efficiency Ulmer Weiß XMF	%	99.999	99.998	99.994	VDI 3926
Δp @ 3.3 cm/s, clean ³	Pa	236	64	40	VDI 3926
Δp @ 3.3 cm/s, after 30 cycles ³	%	+25	+40	+45	VDI 3926
Efficiency ISO ePM1 fresh anal, F9 ⁴	80 % - 95 %	85 % @ 4.0 cm/s			ISO 16890

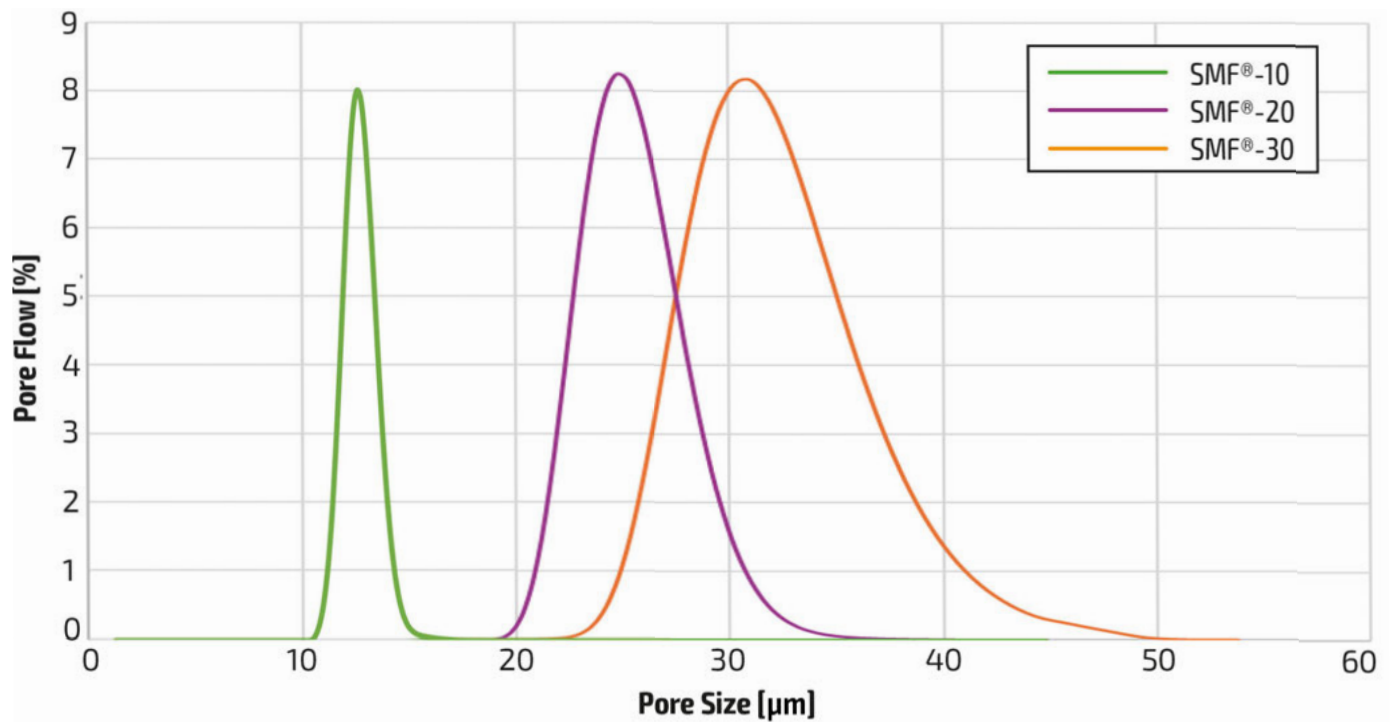
³VDI 3926 Dust Ulmer Weiss XMF (x_{50,3}=3.3 µm) - ⁴ISO 16890 (sheet test up to Δp 450 Pa), conditioning in 2/20 cycles acc. VD 3926

In order to demonstrate the general suitability of the SMF® material for applications in the field of gas filtration, basic measurements of the filtration efficiency were carried out

with the material in accordance with the usual standard norms ISO 5011, VDI 3926 and ISO 16890. The results are shown in the table above.

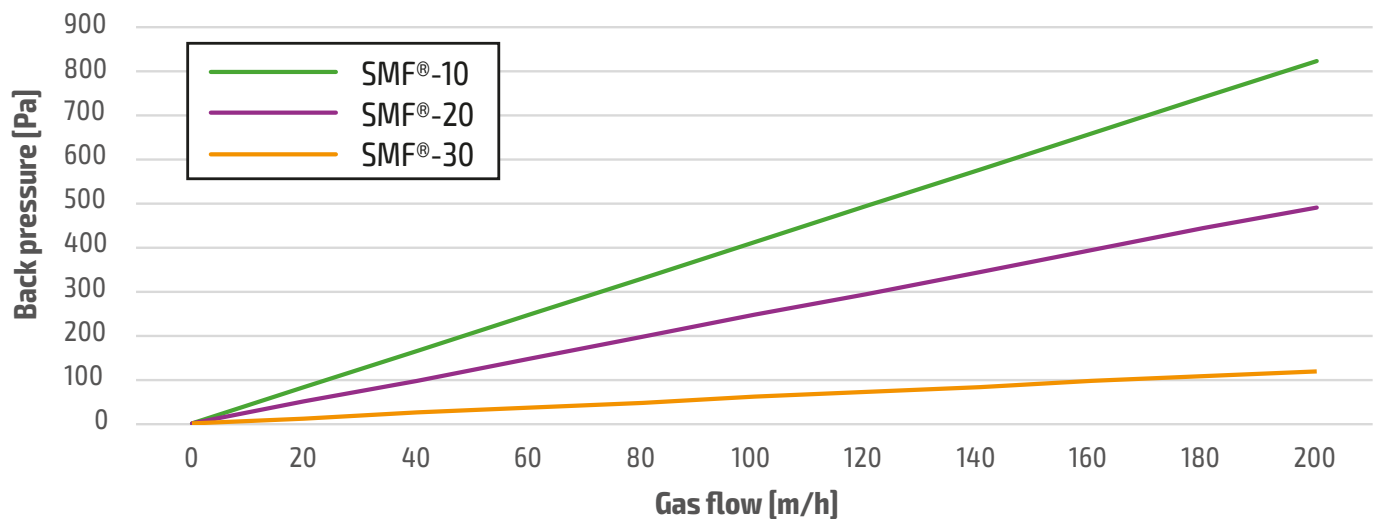
Technical Specification

Pore size distribution



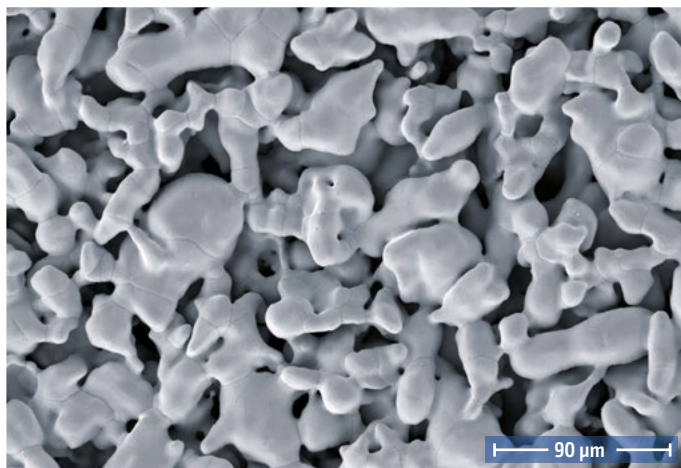
ASTM D6767 (Capillary Flow Test w. IPA)

Differential pressure values SMF®-10, SMF®-20 and SMF®-30



Technical Specification

Physical properties



HJS Sintered Metal Filter, SEM Image

Alloys offer numerous advantages, particularly in enhancing the properties of metals for various applications. One of the key benefits of alloys is their improved chemical resistance compared to pure metals. By combining different elements, alloys can be engineered to resist corrosion, oxidation, and chemical reactions, making them ideal for use in harsh environments. This enhanced chemical stability is crucial in

Alloy	Wet corrosion resistance	Max temperature
310S	Average	700 °C
316L	Strong	500 °C
904L	Very Strong	450 °C

industries such as aerospace, marine, and chemical processing, where materials are constantly exposed to corrosive substances. Additionally, alloys can be tailored to possess specific properties like increased strength, ductility, and heat resistance, further expanding their versatility and usefulness in various technological applications.

SMF® advantages

- Sintered metal band material for flexible mass production
- Flexible in metal forming and design via pleating, cutting, folding and gluing
- Highest filtration efficiency
- Reduced thickness
- Back flushable in air and liquids
- Catalytic properties through coating (functional surface)
- High temperature durability
- Depending on the application and corrosion perforations other alloys can be used

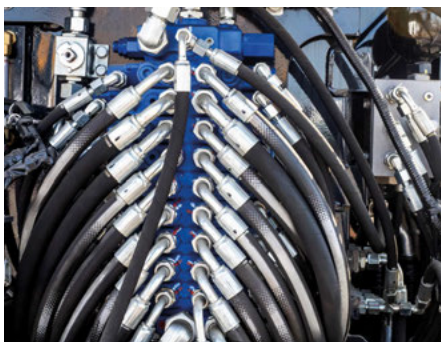
SMF® exhibit particularly good filtration properties especially for Hot-Gases. The filter material is very well suited for the

The combination of these properties offers the possibility to support the decarbonization of industries, where CO₂ emissions are difficult to avoid due to the process, namely through

dedusting of highly charged gas flows, due to its excellent regeneration behaviour.

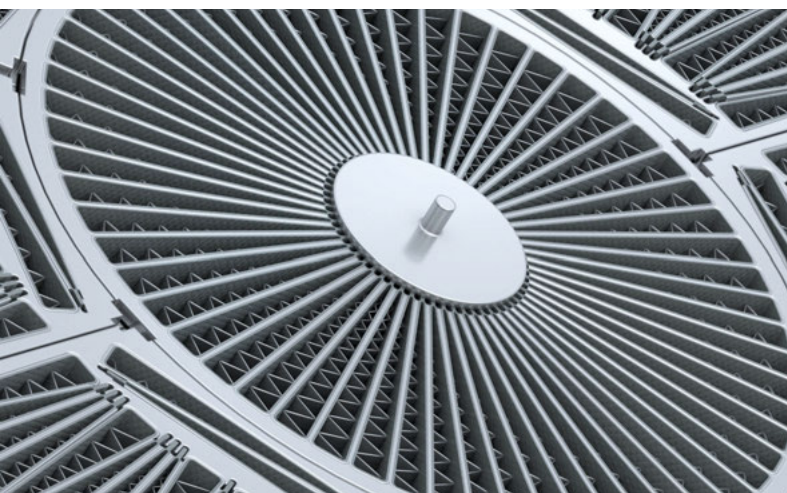
energy recovery or the provision of hot clean filtered process gases for further use. Cooling hot dust-laden process gases can now be eliminated in most cases.

Application areas



Put your trust in **HJS** and benefit from our extensive experience

- > Products for liquid and hot gas filtration
- > Certified reduction of emissions
- > Products for OEM and retrofit
- > Protection of human health and the environment



Subject to change without notice.

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