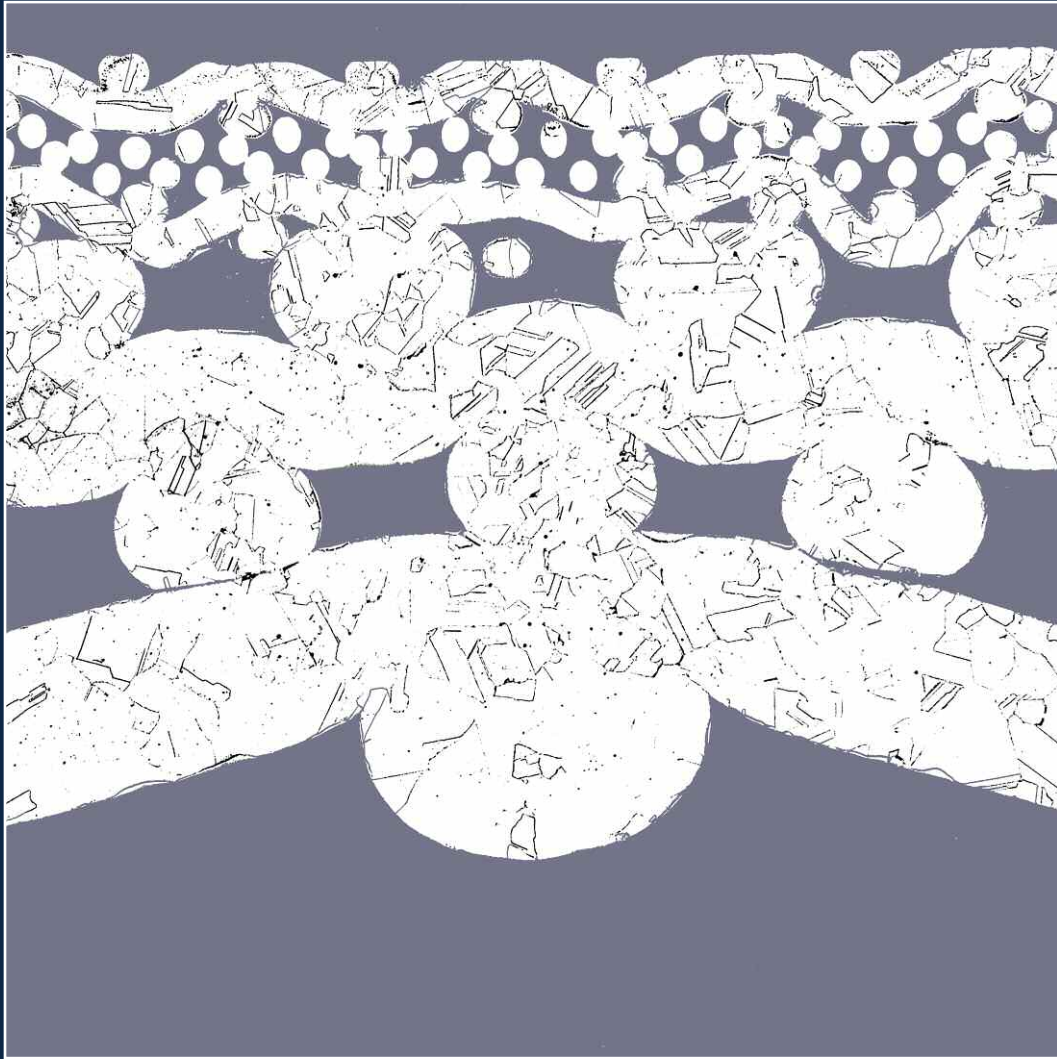


HAYER & BOECKER



DIE DRAHTWEBER



**POROSTAR® FILTERELEMENTS
MADE FROM WOVEN WIRE CLOTH
LAMINATED PANELS.**

HAYER & BOECKER

HAYER POROSTAR®

Charakteristics and Application

HAYER POROSTAR® is a woven wire cloth laminate. Its individual woven wire cloth layers are closely bonded together by diffusion. The final diffusion results from a second thermal treatment after the first sintering process.

The Duo-Sinter-Technique employed in the manufacture of HAYER POROSTAR® leads to the diffusion of all wires in contact with one another. The geometrical structure of the individual woven layers is preserved.

A stable porous filter plate is thus created, with predetermined characteristics in terms of pore-size, pore-distribution, porosity and permeability. POROSTAR® can be formed and welded and is corrosion resistant.

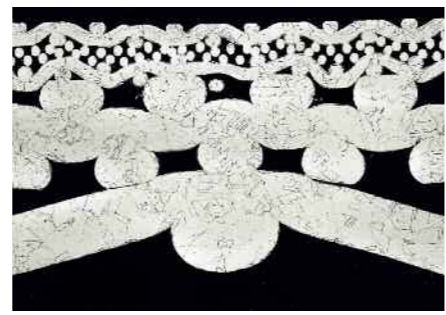
HAYER POROSTAR® is used for filtration and fluidising purposes in many industries: chemical, petro-chemical, pharmaceutical, plastic, food, automobile, mechanical engineering and many others.

It is a filter medium making possible a migration-free filtration in the range from < 1 micron to 200 microns. Even at maximum pressure, POROSTAR® cannot release any small parts of the filter medium.

Sizes

HAYER POROSTAR® is manufactured in seamless sheets of maximum 1,500 mm x 1,200 mm or 1,200 mm x 1,200 mm.

Modern welding techniques are used to combine these sheets into desired larger formats, to make for example filter elements with diameters larger than 1,200 mm or filter cylinders with diameters larger than 400 mm.



POROSTAR® STANDARD, 5 layers, cross-section

Materials

HAYER POROSTAR® is mostly manufactured from Chromium-Nickel-Molybdenum-Steel, Materials 1.4404 = AISI 316-L. Other alloys, see the table below, are also fabricated.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Material	Material No.	AISI ~	C	Si	Mn	Cr	Mo	Ni	Cu	Ti	Co	W	Fe	N	V	Al
Chromium-Nickel-Molybdenum Steel	1.4404	316 L	≤ 0.03	≤ 1.0	≤ 2.0	16.5–18.5	2.0–2.5	11.0–14.0	–	–	–	–	Rest	–	–	–
Chromium-Nickel-Molybdenum Steel + Special Alloys	1.4571	316 Ti	≤ 0.08	≤ 1.0	≤ 2.0	16.5–18.5	2.0–2.5	10.5–13.5	–	≤ 5 x C ≤ 0.8	–	–	Rest	–	–	–
Chromium-Nickel-Molybdenum Steel + Special Alloys	1.4539	904 L	≤ 0.02	≤ 0.7	≤ 2.0	19.0–21.0	4.0–5.0	24.0–26.0	1.0–2.0	–	–	–	Rest	0.04–0.15	–	–
Hastelloy C 22 High Corrosion Resistant Alloy	2.4602	UNS N06022	≤ 0.01	≤ 0.08	≤ 0.5	20.0–22.5	12.5–14.5	Rest	–	–	2,5	2.5–3.5	2–6	–	≤ 0.35	–
Nicrofer® 5923 hMo	2.4605	UNS N06095	≤ 0.01	≤ 0.10	≤ 0.5	22.0–24.0	15.0–16.5	Rest/Bal.	–	–	≤ 0,3	–	–	–	–	0.1–0.4
Inconel 600	2.4816	UNS N06600	≤ 0.01	≤ 0.5	≤ 1.0	14.0–17.0	–	≥ 72.0	≤ 0.5	–	–	–	–	–	–	–
Carpenter 20 Cb 3	2.4660	UNS N08020	≤ 0.07	< 1.0	< 2.0	19.0–21.0	2-3	32.0–38.0	3.0–4.0	Nb + Ta ≥ 8xC ≤ 1.0	≤ 1,5	–	–	–	–	–

© 2016 by HAYER & BOECKER, D-59302 OELDE

Porostar® Executions

HAYER POROSTAR® is manufactured as STANDARD-type and as special types LIGHT, HIFLO and COMBI. Specifications up to 10 mm thick have been produced.

Pressure drop measurements of standard types are available upon request.

Physical Properties

Upon request we can calculate the tenacity values of filters after having studied the construction designs and the operating conditions. There is a charge for this service.

Poresize Micrometer	POROSTAR STANDARD		POROSTAR Special Type		
	5-layers	6-layers	LIGHT 3-layers	HIFLO 4-layers	COMBI
< 1	x	x	x		x
1	x	x	x		x
2	x	x	x		x
5	x	x	x		x
10	x	x	x		x
20	x	x	x	x	x
25				x	x
32				x	x
40	x	x		x	x
50				x	x
63				x	x
75	x	x			x
80				x	x
100	x	x		x	x
Thickness apx. mm	1.55 – 1.65	3.3 – 3.5	0.4 – 0.5	1.6 – 1.8	*
Weight apx. kg/m ²	9.5	15	2	5.3	*

* depending on the execution Other poresizes as agreed upon

POROSTAR STANDARD	Proportional Limit		Tensile Strength		Ductile Yield ε
	Rp 0,2	Rp 0,2*	Rm	Rm*	
	N/10 mm	N/mm ²	N/10 mm	N/mm ²	%
5-layers	1100	65	2500	147	10
6-layers	1400	40	3800	108	13

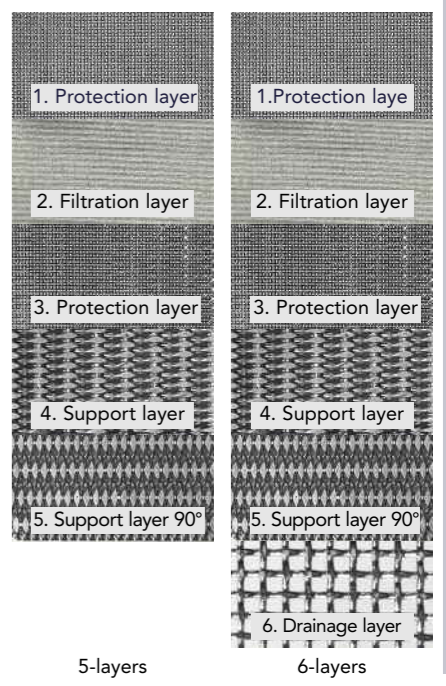
POROSTAR® Standard

POROSTAR® STANDARD is put in filter sheets and cylinders. It is designed with five or six layers and specially suitable for unbalanced loads.

Construction and Function:

1. Protection layer: Protection of the filter layer against physical influences
2. Filter layer: selected according to the poresize
3. Protection layer: protects the filtration layer from possible deformation under high pressure
4. Support layer
5. Support layer 90° } makes the wire cloth laminate stable and improves the welding characteristics
6. Drainage layer: improves the quantity of the filter capacity

If materials processing makes it necessary the construction can be made without the first protection layer.



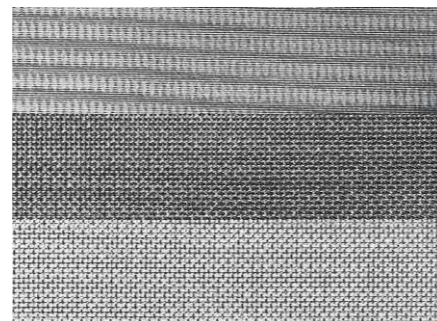
POROSTAR® SPECIAL TYPES

POROSTAR® Light

POROSTAR® LIGHT is suitable for the manufacturing of pleated filter cylinders, e.g. 2.5 mm, and is composed of three woven wire cloth layers.

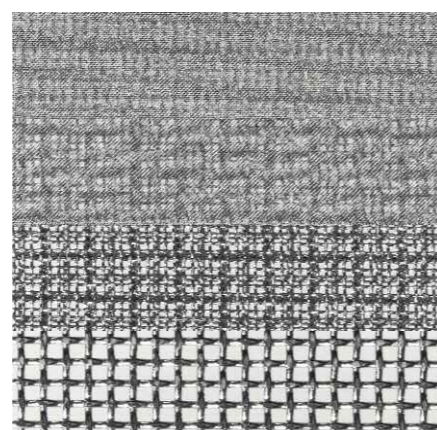
Construction and function:

1. Protection layer: protects the filtration layer and improves its stability
2. Filtration layer: selected according to the poresize
3. Protection layer: protects the filtration layer and improves its stability



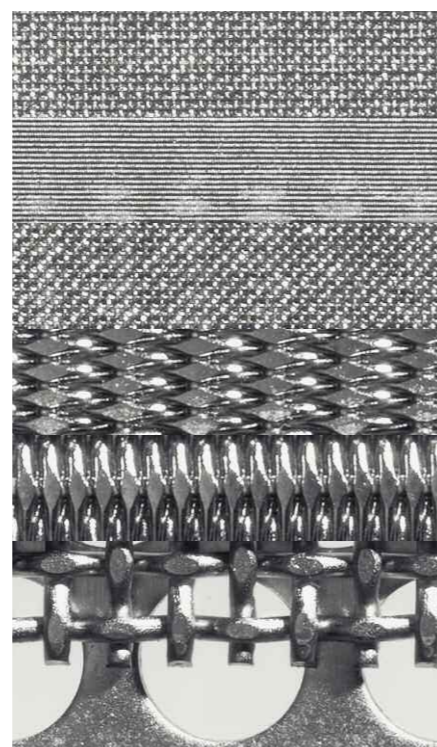
POROSTAR® Hiflo

Because of its important flow capacity POROSTAR® HIFLO is specially suitable for sieving and filtering methods using minimized pressures. Each woven wire cloth layer has square meshes.



POROSTAR® Combi

POROSTAR® COMBI is suitable for high pressures even in reverse direction flow. Woven wire cloth layers and a perforated metal plate are bonded by sintering. POROSTAR® COMBI is available in STANDARD type and in special types LIGHT and HIFLO as well. The number of layers and the thickness of the perforated metal plate are variable.



Drainage

Drainage layers are often integrated in the porous wire cloth laminate, e.g. in POROSTAR® STANDARD with six layers. When manufacturing filter components with POROSTAR®, EGLA flat top screen, because of their high efficacy.

EGLA-FLAT TOP SCREENS	
Aperture Width	Wire Diameter
w mm	d mm
5	1.6
6.3	2.5
15	3.8

PLASMA-WELDED JOINTS OF POROSTAR®



POROSTAR® butt welded to a profile with EGLA flat top screen as an additional drainage and support layer.



POROSTAR® butt welded to a profile with two layers of EGLA flat top screen and an intermediate square mesh layer.



POROSTAR® welded to the outer edge of a steel rod.



POROSTAR® and drainage layer welded to a perforated metal plate.

POROSTAR® Connector-Types of Screw and welded Joints with Carrier Plate

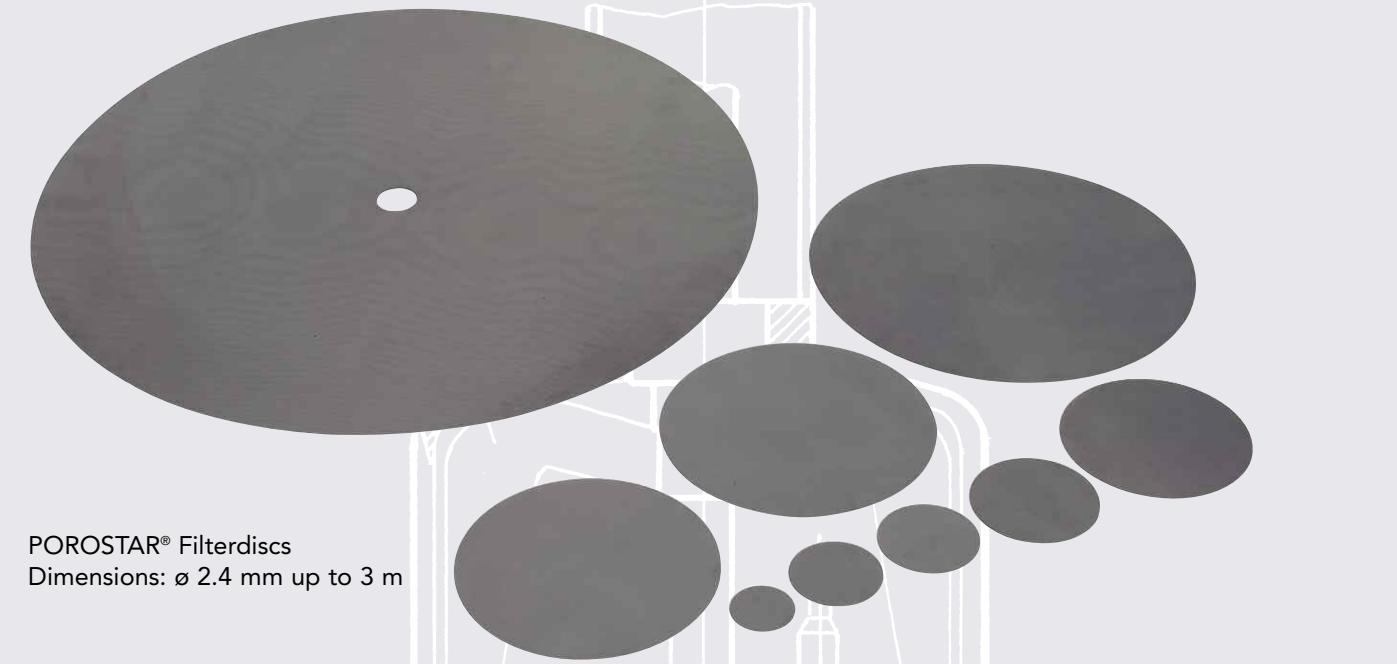


POROSTAR® with female screw connectors plugged through and bonded on both sides.

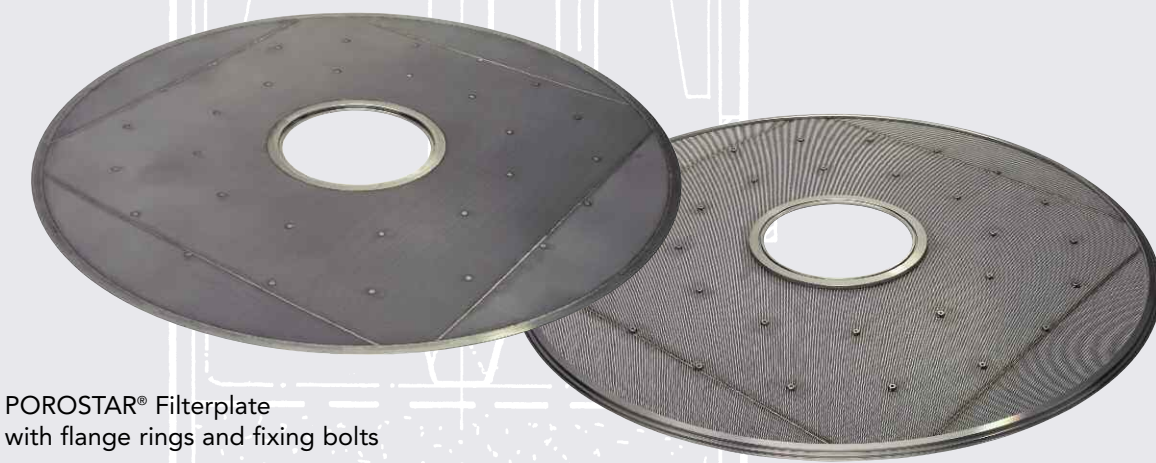


POROSTAR® and perforated metal plate bonded by means of plasma-welding.

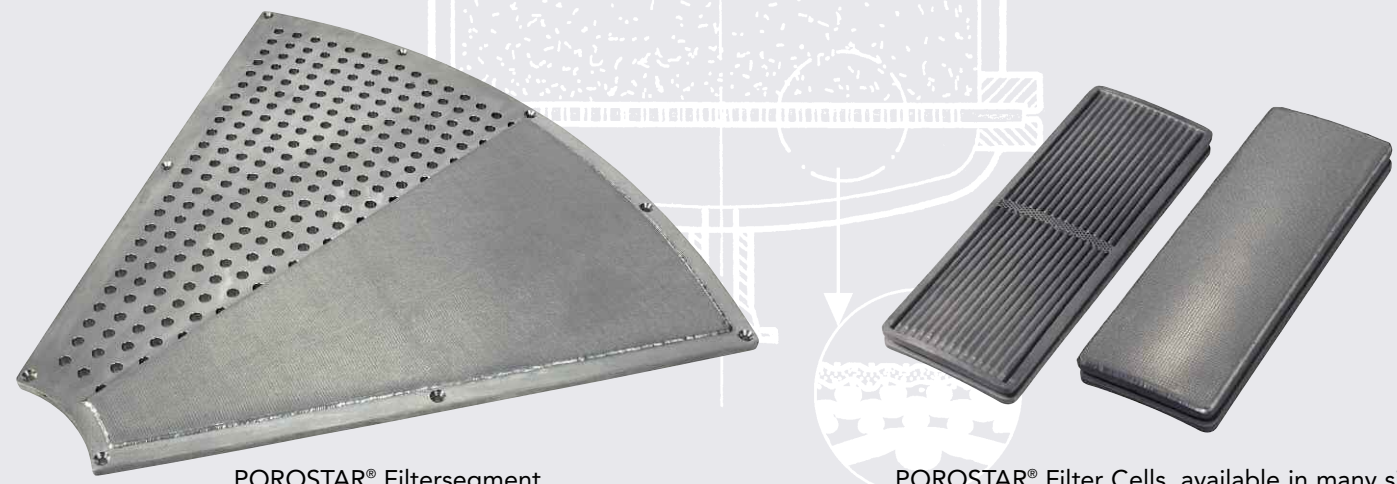
Filterplates and Filterdiscs



POROSTAR® Filterdiscs
Dimensions: \varnothing 2.4 mm up to 3 m



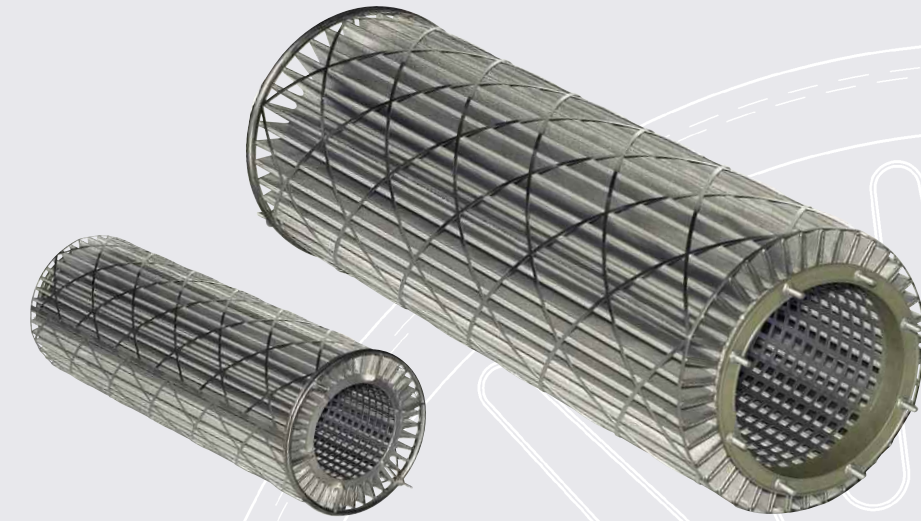
POROSTAR® Filterplate
with flange rings and fixing bolts



POROSTAR® Filtersegment

POROSTAR® Filter Cells, available in many sizes

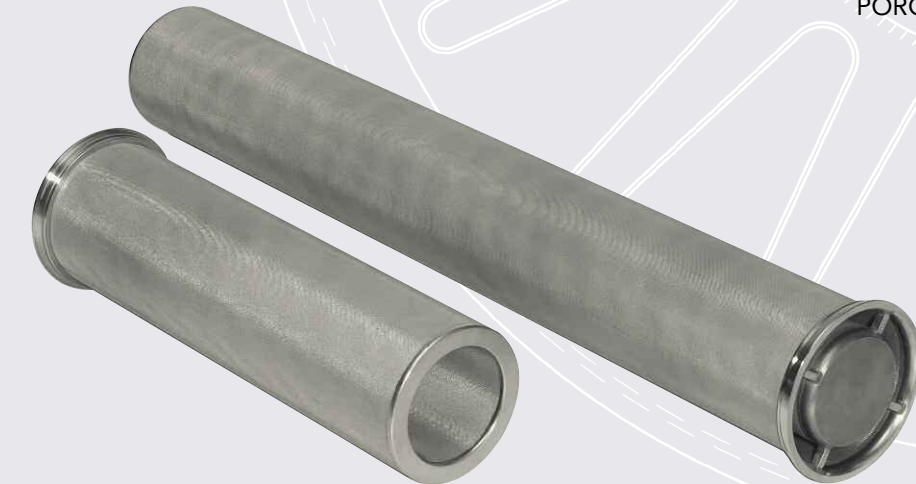
Filter Cylinder



POROSTAR® Starfilter with reinforcement cage
Dimensions: \varnothing up to 325 mm, length up to 1,200 mm



POROSTAR® Filter Cylinder with cover and
connection ring



POROSTAR® Tandem-Filter Candle
Dimensions: \varnothing 170 / 125 mm,
Lengths: 422 mm, 622 mm, 822 mm, 1,222 mm



POROSTAR® Starfilter, of variable \varnothing and length



POROSTAR® Cylinder with flange rings.
Longitudinal and circumferential seam glued.
Dimensions: \varnothing 230 mm, length 570 mm

Filter Candles



POROSTAR® Filter Candle
with different connectors.
Dimensions: from \varnothing ab 14 mm upwards,
length variable

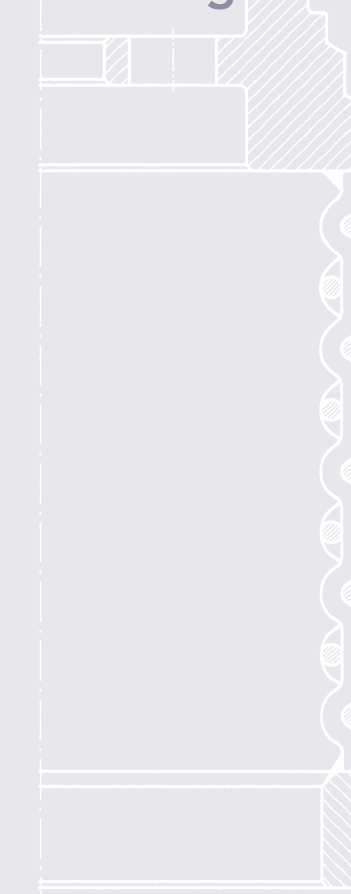


POROSTAR® Filter Candle with
bottom flange and receiving ring



POROSTAR® Filter Candle with a threaded connector and end cap
Dimensions: \varnothing 25 mm, length variable

Centrifugal Baskets



POROSTAR® Centrifugal Basket for TzT
Dimensions: \varnothing 400 mm, 600 mm, 800 mm, 1,300 mm,
Lengths: 300 mm, 400 mm, 500 mm, 600 mm



POROSTAR® Centrifugal Basket for trailing
blade centrifuges

Belgium:**HAYER BELGIUM S.A.**

Rue des Gaillettes 9
B-4651 BATTICE
Téléphone: 087-69 29 60
Fax: 087-69 29 61
E-Mail: hbsa@cybernet.be
Internet: www.haverbelgium.com

France:**HAYER & BOECKER****Toiles Métalliques**

7, Rue Sainte Catherine
F-24100 BERGERAC
Téléphone: 5-53 24 93 13
Fax: 5-53 24 95 99
E-Mail: haver.toiles@wanadoo.fr
Internet:
www.les-tissus-metalliques.com

Spain:**HAYER & BOECKER****Telas Metalicas**

Avda. Les Bobiles, 7
Casa 2
E-08850 GAVA (Barcelona)
Teléfono: 93-6 62 63 55
Fax: 93-6 62 90 59
E-Mail: haverboecker@telefonica.net
Internet: www.telas-metalicas.com

Great Britain:**H&B Wire Fabrications Ltd.**

30-32 Tatton Court
Kingsland Grange, Woolston
GB-WARRINGTON,
Cheshire WA1 4RR
Phone: 01925-81 95 15
Fax: 01925-83 17 73
E-Mail: sales@hbwf.co.uk
Internet: www.hbwf.co.uk

Belarus:**OOO HAYER BY**

Ul. Zhukova, D.3
BY-231295 Lida, Grodno
Тел/факс: +375-154-53-82-52
E-Mail: info@haver.by
Internet: www.haver.by

U.S.A.:**W.S. TYLER**

8570 Tyler Boulevard
USA-MENTOR, Ohio 44060
Phone: 440-974-1047
+ 800-321-6188
Fax: 440-974-0921
E-Mail: wstyler@wstyler.com
Internet: www.wstyler.com

Canada:**HAYER & BOECKER CANADA**

225 Ontario Street
CAN-ST. CATHARINES,
Ontario L2R 7B6
Phone: 905-688-2644
+ 800-325-5993
Fax: 905-688-4733
E-Mail: sales@wstyler.ca
Internet: www.wstyler.ca

HAYER & BOECKER · Ennigerloher Straße 64 · D-59302 OELDE · Germany
Phone: +49-(0) 25 22-300 · Fax: +49-(0) 25 22-30 404
E-Mail: dw@haverboecker.com
Internet: www.weavingideas.com