



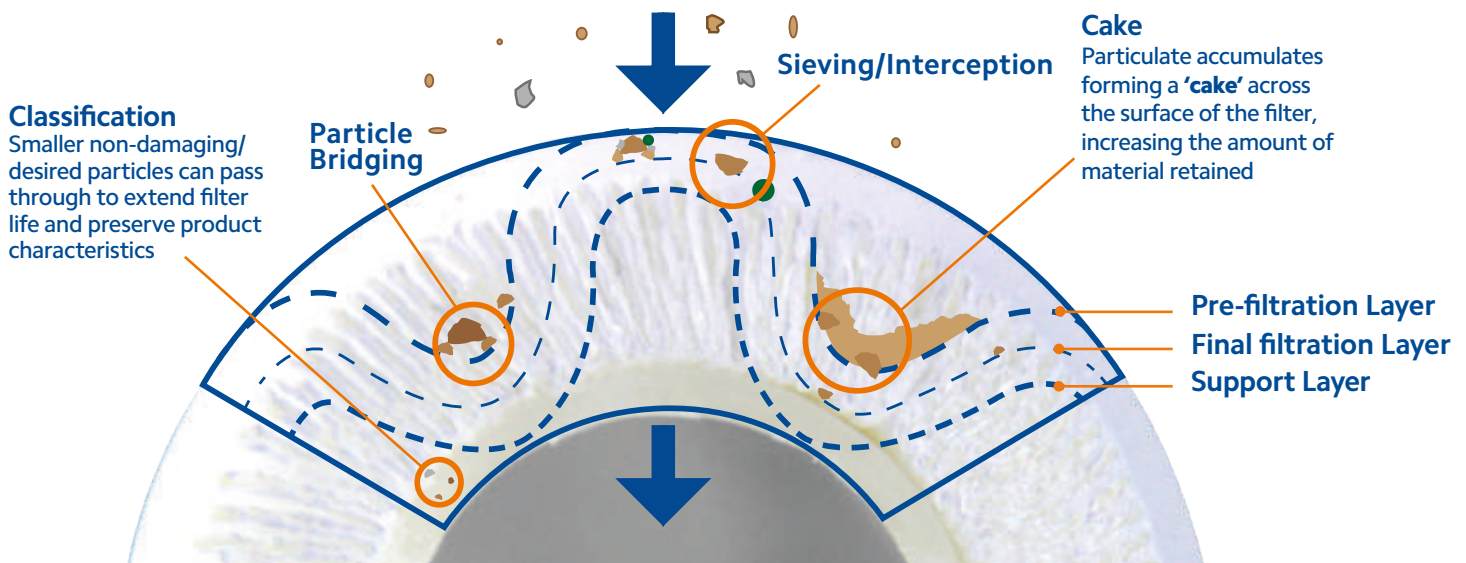
Pleated Filtration

www.fileder.co.uk

Pleated Technology

Pleated filters are widely used as effective surface filtration due to their excellent flow rates and high efficiency.

Pleating dramatically increases available surface area whilst maintaining high dirt loading and low pressure drops. Much of the media used in pleated cartridges also has some depth characteristics, thanks to its multi-layer construction, thereby aiding particle retention and classification.

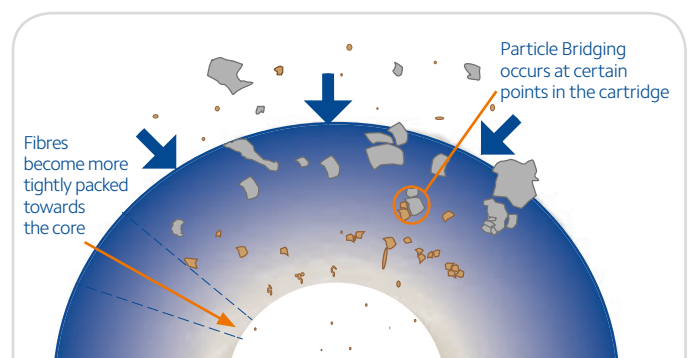


Surface Filtration Technology

Pleated filters are the ideal technology of choice over depth filtration for retention of known or uniformly sized particles.

The Standard (SPE) range of cartridges features a single layer media, which filters on the principles of direct interception and 'caking' where multiple particles accumulate across the media pore. Over time this leads to partial closure, which can increase efficiency and the chance to target finer particles.

The entire Premier range includes support and pre-filtration layers providing an element of depth characteristics. These layers retain larger particles, ensuring the specified micron rating of the cartridge can be utilised for exacting classification.



Depth Filtration Technology

The fibres become more tightly packed throughout a depth cartridge, progressively reducing the size of particles that can pass through the filter.

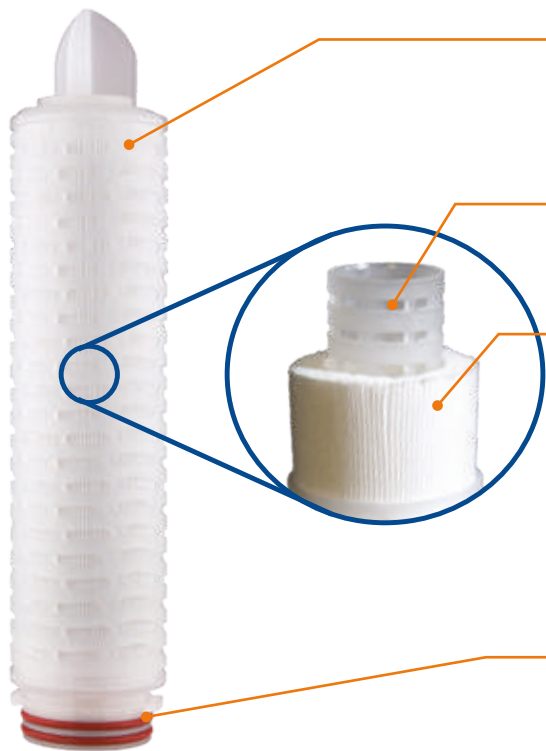
Advantage: Economic to produce.

Disadvantage: Higher pressure drop means a shorter service life compared to pleated cartridges.

Premier Pleat Construction

The Premier Pleat, Crypto and Bubble Point ranges are all constructed with a rigid inner core and outer polypropylene cage. Offering protection for the pleat pack, the cage also allows a variety of end-caps to be thermally bonded to the cartridge. This secure construction technique prevents bypass, creating a seal strong enough for repeated steam or chemical sterilisation as well as cartridge integrity testing.

Developments in 2018 see a new outer cage design that increases its void volume by over 10%. Whilst maintaining cartridge strength, increasing the open area allows a more uniform distribution of flow across the entire pleat pack ensuring low pressure drop and maximised dirt holding capacity.



Outer support cage

- Provides product strength and rigidity.
- Protects the pleat pack, ensuring media integrity.
- New outer cage design with increased void volume.

Inner support cage

- End-caps are bonded to the support core for product security and strength, ensuring no bypass and enabling integrity testing.

Media

- Pleated construction increases surface area, delivering high flow rates, low initial clean pressure drop and optimised dirt holding.
- Designed with an optimum balance of filtration media and void volume, the pleat pack is engineered to ensure that the entire surface area of the cartridge is used.

Thermally bonded end-cap

- No adhesive ensures no leaching of additives.
- Numerous end-caps and seals available to suit various housings (refer to pages 32 and 33).

Identification

Lot Coded

- Laser etched lot code on membrane and Crypto cartridges
- Traceable back to raw materials

QR Code

- Links directly to further information for each product

Barcode

- Product traceability
- Stock management integration

Packaging

Four Protective Layers

- Vacuum sealed inner packaging
- Tough outer polybag layer provides additional protection
- Individual product boxes
- Heavy duty outer carton





Premier Pleat Glass Fibre

0.45-10 micron

Offering higher efficiency filtration than the PPP, the SPECTRUM Premier Pleat Glass Fibre combines absolute rated particle removal with high flow rate capabilities. Manufactured using only strong Borosilicate glass fibre media with

two rigid support layers, the cartridge is able to meet demanding flow rate requirements without comprising the integrity of the media. Suitable for applications where known, consistent and absolute removal characteristics are required.

Materials of Construction

Filter Media
Glass Fibre

Core
Polypropylene

Support Media
Polypropylene

Cage
Polypropylene

End-cap
Polypropylene
Polypropylene with stainless steel ring (Q and Z)

Seal
Silicone (as standard)

Compliance

BS6920 Approved
FDA Compliant Materials
WRAS Approved
USP Class VI - 121°C Plastics
Regulation (EC) 1935/2004
Regulation (EU) No10/2011

Efficiency

		Challenge Particulate Size								
		0.1 µm	0.2 µm	0.45 µm	1 µm	3 µm	5 µm	10 µm	20 µm	30 µm
Cartridge Micron Rating	0.45 µm	99.99%	99.994%	99.999%	99.9993%	99.99996%				
	1 µm		99.99%	99.993%	99.999%	99.99996%				
	3 µm			99.991%	99.995%	99.9991%	99.9999%	99.99992%		
	5 µm				99.99%	99.99%	99.9994%	99.9997%	99.9999%	
	10 µm					99.99%	99.99%	99.9996%	99.9997%	99.9991%

Configurations

Micron (µm)
0.45 1 3 5 10

Length (")
9¾ 10 20 30 40

End-cap (refer to page 32)
AA CG EG EH FG FH MG
MH QG ZH

Seal
S = Silicone E = EPDM V = Viton®

Specification

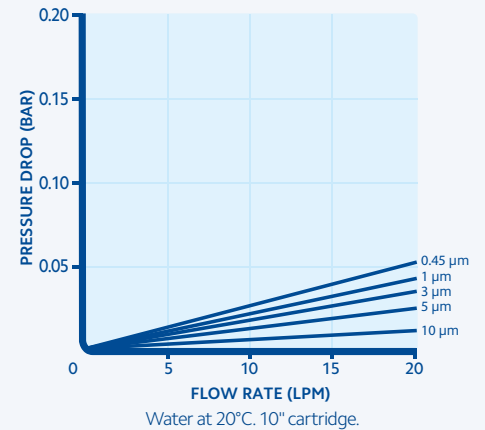
Efficiency
99.99 - 99.9996%

Max. Operating Temperature
82°C

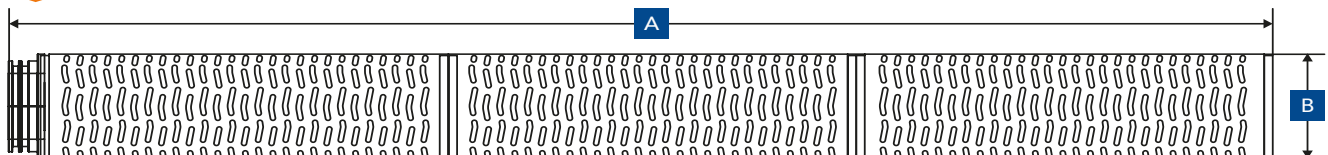
Max. Sterilising Cycles
5 x 20 min cycles at 120°C. Requires stainless steel encapsulated end-caps Q (222) and Z (226).

Surface Area
0.41m² per 10"

Max. Operating Pressure Differential
6 bar at 21°C



Dimensions & Packaging



Length	A (mm)				B (mm)	Packaging	
	AA	CG	EG/FG/MG/QG	EH/FH/MH/ZH		Box Qty	Box Weight (kg)
9¾"	248	-	-	-	70	9	4
10"	-	241	270	310	70	9	4
20"	508	506	520	560	70	9	7
30"	750	-	770	810	70	9	10
40"	1000	-	1020	1060	70	9	14

Part Number

Code	Micron	Length	End-Cap	Seal
PPG	0.45, 1, 3, 5, 10	9¾	AA	S, E, V
		10, 20, 30, 40	CG, EG, EH, FG, FH, MG, MH, QG, ZH	

e.g. PPG-0.45-40EHS

End-Caps

Pleated Cartridge Configurations

Where product codes indicate an optional end-cap is available, a choice can be made from the following styles. End-cap variations are made to suit housing

designs and application requirements, which dictate the reliability and integrity of the seal, along with the ease of cartridge change out.



AA
Double Open Ended

Open-end gaskets, for use with housings containing a knife edge seal mechanism.



CG
213 with Closed Recess

Single internal O-ring, seals onto housings that have a spigot.



EG / MG
222/224 with Closed Recess

Double external O-rings seal into female housing receiver with a closed, recessed end, which is for housings with spigots.



EH / MH
222/224 with Fin Adaptor

Double external O-rings seal into female housing receiver whilst the Fin locates into housing plate holes to maintain vertical orientation.



FG
226 with Closed Recess

Bayonet type tabs lock into female housing receiver whilst the recessed end locates into housings with spigots.



FH
226 with Fin Adaptor

Bayonet type tabs lock into female housing receiver whilst the Fin locates into housing plate holes to maintain vertical orientation.

Stainless Steel Encapsulated End-Caps



QG
222 with Closed Recess

Suitable for high temperature housings, the QG configuration is suitable for repeated sterilisation and offers one of the best seals possible with its double O-ring fitting and stainless steel insert.



ZH
226 with Fin Adaptor

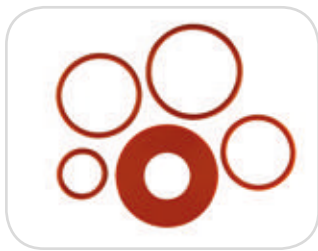
Suitable for multi-round high temperature housings, the ZH configuration provides the most positive seal with double O-rings and twin locking tabs. The encapsulated stainless steel insert makes the Z fitting suitable for repeated sterilisation.

Seals

Pleated Cartridge Configurations

Providing a water-tight seal between the housing and cartridge, O-rings and gaskets are essential to the integrity of the filter and come in a range

of materials, including Silicone, EPDM, Teflon® and Viton® to suit most applications.



Silicone



EPDM



Teflon®



Viton®

Chemical Compatibility

The below table details the different compatibility of each O-ring within different applications. (Source: Cole-Parmer)

	Silicone	EPDM	Teflon	Viton®
Beer	Excellent	Excellent	Excellent	Excellent
Whisky & Wine	Excellent	Excellent	Excellent	Excellent
Deionised Water	Fair	Excellent	Excellent	Excellent
Alcoholic Methyl	Excellent	Excellent	Excellent	Fair
Aromatic Hydrocarbons	Poor	Poor	Excellent	Excellent
Sodium Hydroxide	Excellent	Good	Excellent	Poor
Hydrochloric Acid	Poor	Poor	Excellent	Excellent
Synthetic Hydraulic Oil	Good	Excellent	Excellent	Excellent

O-ring Sizing

This actual size chart is a useful aid in identifying common replacement O-rings. Place your current O-ring onto the chart to match the size required.

