

AEB Group company



# FILTER CARTRIDGES



## Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.2µm - 0.65µm - 0.8µm - 1.2µm, the microbiological protection is defined by specific microorganisms
- Membrane integrity testable multiple times
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

## Microbiological retention

- Logarithmic reduction (LRV) is calculated as follows:

$$LRV = \log_{(10)} = \frac{\text{Number of microorganisms upstream of filter}}{\text{Number of microorganisms downstream of filter}}$$

- The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

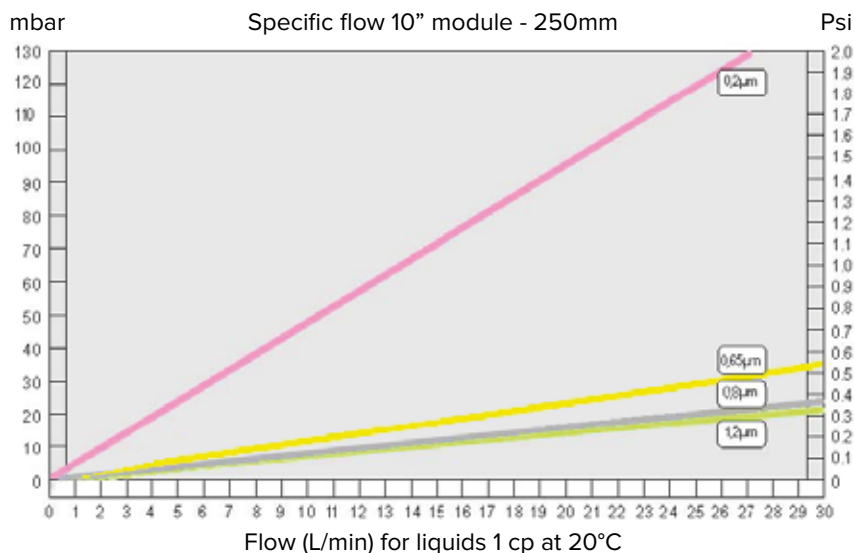
	0,2 µm	0,65 µm	0,8 µm	1,2 µm
<i>P. Diminuta</i>	S			
<i>L. Oenos</i>	S	R	R	
<i>Acetobacter</i>	S	R	R	
<i>Brettanomyces</i>	S	R	R	
<i>S. Cerevisiae</i>	S	S	S	S

S = Sterile

R = Accentuated reduction

## Validation

- The membranes used in **ABSOLUTE PES** cartridges are tested and validated.
- All **ABSOLUTE PES** cartridges are subjected to a double integrity test:
  - every single module before assembly
  - the entire filter element assembled before delivery
- This exclusive DANMIL validation system ensures the absolute integrity of the filter element.



## Construction materials

Filter membrane	Asymmetric hydrophilic polyethersulfone
Support and drainage layers	Polyester
Internal and external cage	Polypropylene
End supports	Nylon
Reinforcing ring	Stainless steel aisi 316 L
Standard 'O' rings	Silicone
Material coupling	Thermowelding
Filter plate coupling	Ultrasound

## Operational data

Filter surface	0,65 m <sup>2</sup> for a 250 mm module (10")
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72.5 PSI)
Max Δp at 121°C with steam	0,3 Bar (4,3 psi)

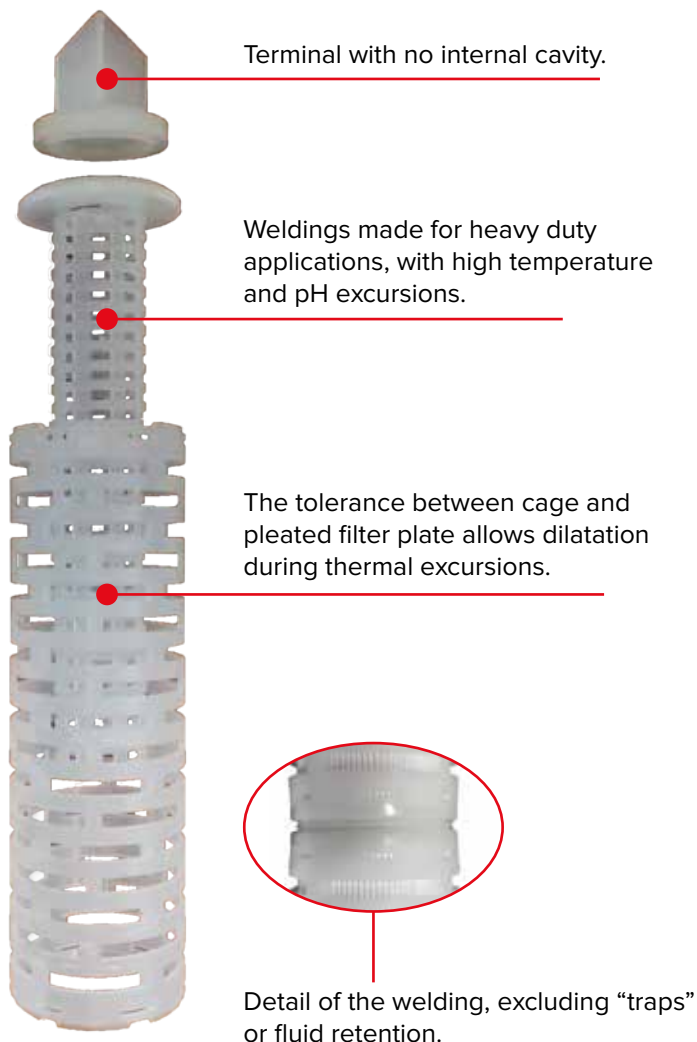
## Regeneration and sanitation

- **ABSOLUTE PES** cartridges can be repeatedly regenerated with hot water (max 80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.
- DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

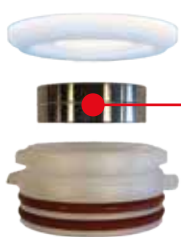
## Integrity test

		0,2 μm	0,65 μm	0,8 μm	1,2 μm
BUBBLE POINT	bar	3.1	1.2	1.0	0.8
	psi	44	17	14	11
PRESSURE TEST	bar	2.5	1.0	0.8	0.6
	psi	36	14	11	8
MAX. DIFFUSION FLOW FOR MODULE (AIR)	ml/min	25	25	25	25
MAX. DIFFUSION FLOW FOR MODULE (NITROGEN)	ml/min	23	23	23	23

ABSOLUTE PES FILTER ELEMENTS ARE PACKAGED IN A CLEAN ROOM. THE RIGID CARDBOARD PACKAGE HAS ANTI-SHOCK TERMINAL PARTICULARS.



Filter elements are fluxed with extra pure water and then dehydrated with hot and sterile air flow.



The stainless steel ring is a reinforcement to maintain the joint size stable, it is detachable for disposal.

# ABSOLUTE PES PLUS

Asymmetric membrane in hydrophilic polyethersulfone

## Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.45µm - 0.65µm microbiological protection is defined by specific microorganisms
- Membrane integrity testable multiple times
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

## Microbiological retention

- Logarithmic reduction (LRV) is calculated as follows:

$$LRV = \log_{(10)} = \frac{\text{Number of microorganisms upstream of filter}}{\text{Number of microorganisms downstream of filter}}$$

- The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

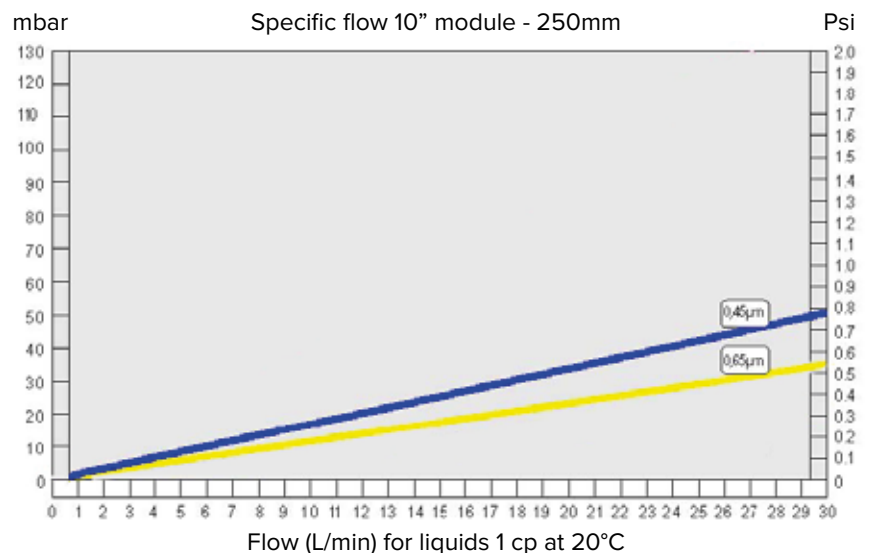
	0,45 µm	0,65 µm
<i>P. Diminuta</i>	R	
<i>L. Oenos</i>	S	R
<i>Acetobacter</i>	S	R
<i>Brettanomyces</i>	S	R
<i>S. Cerevisiae</i>	S	S

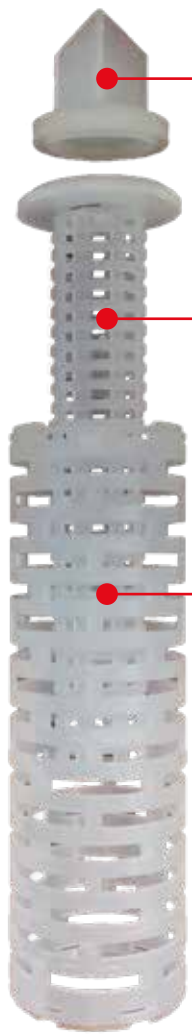
S = Sterile

R = Accentuated reduction

## Validation

- The membranes used in **ABSOLUTE PES PLUS** cartridges are tested and validated.
- All **ABSOLUTE PES PLUS** cartridges are subjected to a double integrity test:
  - every single module before assembly
  - the entire filter element assembled before delivery
- This exclusive DANMIL validation system ensures the absolute integrity of the filter element.





Terminal with no internal cavity.

Weldings made for heavy duty applications, with high temperature and pH excursions.

The tolerance between cage and pleated filter plate allows dilatation during thermal excursions.



Detail of the welding, excluding "traps" or fluid retention.



Filter elements are fluxed with extra pure water and then dehydrated with hot and sterile air flow.



The stainless steel ring is a reinforcement to maintain the joint size stable, it is detachable for disposal.

## Construction materials

Filter membrane	Asymmetric hydrophilic polyethersulfone
Support and drainage layers	Polyester
Internal and external cage	Polypropylene
End supports	Nylon
Reinforcing ring	Stainless steel aisi 316 L
Standard 'O' rings	Silicone
Material coupling	Thermowelding
Filter plate coupling	Ultrasound

## Operational data

Filter surface	0,8 m <sup>2</sup> for a 250 mm module (10")
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72.5 PSI)
Max Δp at 121°C with steam	0,3 Bar (4,3 psi)

## Regeneration and sanitation

- **ABSOLUTE PES PLUS** cartridges can be repeatedly regenerated with hot water (max 80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.
- DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

## Integrity test

		0,45 μm	0,65 μm
BUBBLE POINT	bar	1,7	1,2
	psi	24	17
PRESSURE TEST	bar	1,4	1,0
	psi	20	14
MAX. DIFFUSION FLOW FOR MODULE (NITROGEN)	MI/min	29	29

**ABSOLUTE PES PLUS FILTER ELEMENTS ARE PACKAGED IN A CLEAN ROOM. THE RIGID CARDBOARD PACKAGE HAS ANTI-SHOCK TERMINAL PARTICULARS.**

# ABSOLUTE PP

Pleated plate in heat-sealed polypropylene

## Technical characteristics

- Thermo-welded polypropylene filter media, with no electric charge
- Porosity 0.6 - 1 - 3 - 5 - 10 - 20  $\mu\text{m}$ , with absolute particle degree  $\beta$  5000
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

## Retention efficiency

- Particle removal efficiency is established with the Beta ratio ( $\beta$ ):

$$\beta = \frac{\text{Number of particles upstream of filter}}{\text{Number of particles downstream of filter}}$$

The **ABSOLUTE PP** filter cartridges are all validated with  $\beta$  5000 efficiency, which corresponds to a 99.98% particle retention.



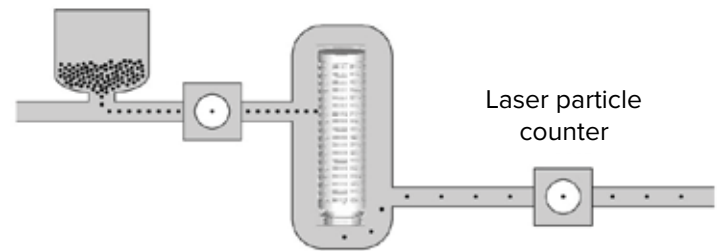
UPSTREAM PARTICLES = 100.000 units



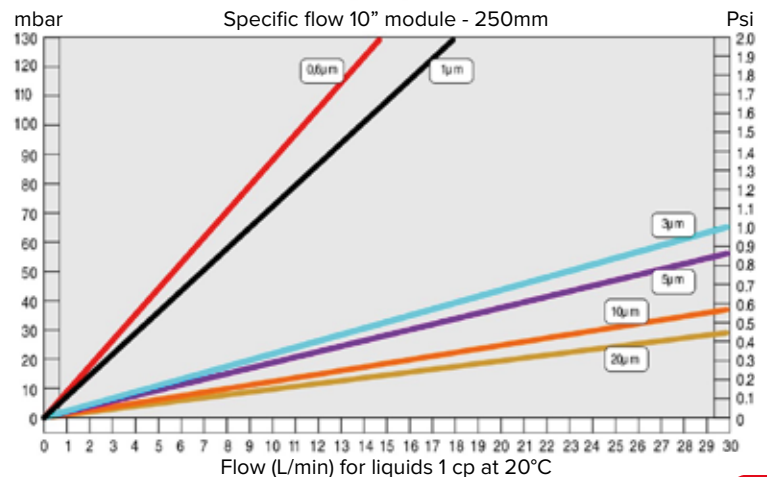
DOWNSTREAM PARTICLES	RATIO	$\beta$	EFFICIENCY
50.000	$\frac{100.000}{50.000}$	2	50%
5.000	$\frac{100.000}{5.000}$	20	95%
1.000	$\frac{100.000}{1.000}$	100	99%
100	$\frac{100.000}{100}$	1.000	99,9%
20	$\frac{100.000}{20}$	5.000	99,98%

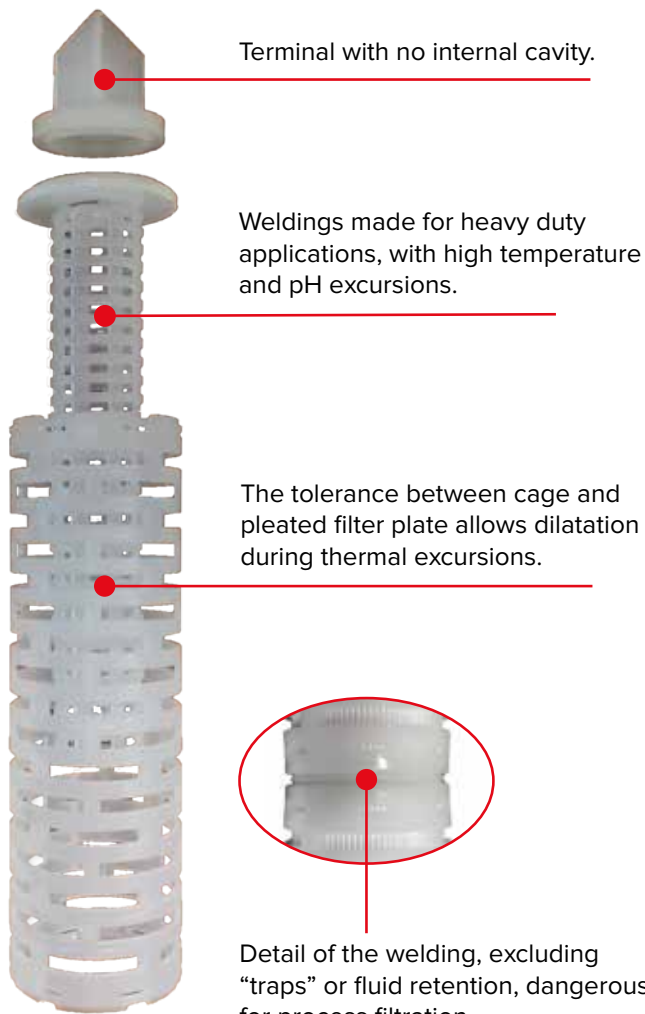
## Validation

The particulate retention efficiency of the **ABSOLUTE PP** filter elements is randomly tested, by performing a destruction filtration test, with a suspension of ACFTD (AC Fine Test Dust) standard particles and using in-line laser particle counters, according to ISO 4572 procedure.



- 0,6 $\mu\text{m}$
- 1 $\mu\text{m}$
- 3 $\mu\text{m}$
- 5 $\mu\text{m}$
- 10 $\mu\text{m}$
- 20 $\mu\text{m}$





Construction suitable for backflush regeneration.



The Inox ring is a reinforcement to maintain the joint size stable, it is separable for disposal.

Referenza: ABSOLUTE\_PP\_DEP\_EN\_0070219\_DANNMIL\_Italy

## Construction materials

Filter plate	Pleated heat-sealed polypropylene, scalar porosity
Support and drainage layers	Polypropylene microfiber
Internal and external cage	Polypropylene
Terminal supports	Polypropylene
Standard 'O' rings	Silicone
Material coupling	Thermowelding

## Operational data

Filter surface	From 0.45 m <sup>2</sup> (4,8 ft <sup>2</sup> ) to 0.6 m <sup>2</sup> (6,5 ft <sup>2</sup> ) for a 250 mm module (10")
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72.5 psi)
Max Δp at 121°C with steam	0,3 Bar (4.3 psi)

## Regeneration and hygienization

- **ABSOLUTE PP** filter elements can be repeatedly regenerated also in backflush, with hot water max 80°C, sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.

# FLUID CLEAN PES

Asymmetric membrane in hydrophilic polyethersulfone

AEB Group company



## Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.2µm - 0.45µm - 0.65µm, the microbiological protection is defined by specific microorganisms
- Membrane integrity testable multiple times
- Wide compatibility with regenerating and sanitizing products
- Food grade
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## Microbiological retention

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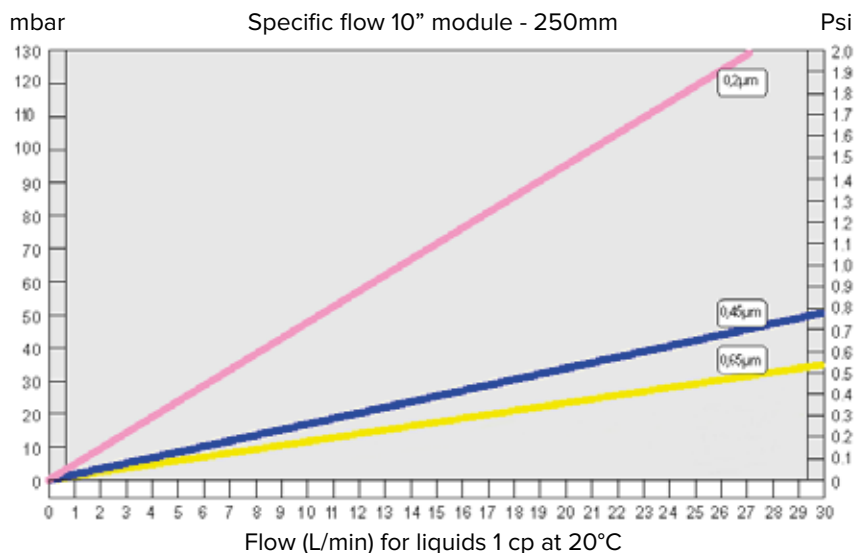
	0,2 µm	0,45 µm	0,65 µm
<i>P. Diminuita</i>	S	R	
<i>L. Oenos</i>	S	S	R
<i>Acetobacter</i>	S	S	R
<i>Brettanomyces</i>	S	S	R
<i>S. Cerevisiae</i>	S	S	S

S = Sterile

R = Accentuated reduction

## Validation

- The membranes used in **FLUID CLEAN PES** cartridges are tested and validated.
- All **FLUID CLEAN PES** cartridges are subjected to a double integrity test:
  - every single module before assembly
  - the entire filter element assembled before delivery
- This exclusive DANMIL validation system ensures the absolute integrity of the filter element.





# Construction materials

Filter membrane	Asymmetric hydrophilic polyethersulfone
Support and drainage layers	Polyester
Internal and external cage	Polypropylene
End supports	Nylon
Reinforcing ring	Stainless steel aisi 316 L
Standard 'O' rings	Silicone
Material coupling	Thermowelding
Filter plate coupling	Ultrasound

# Operational data

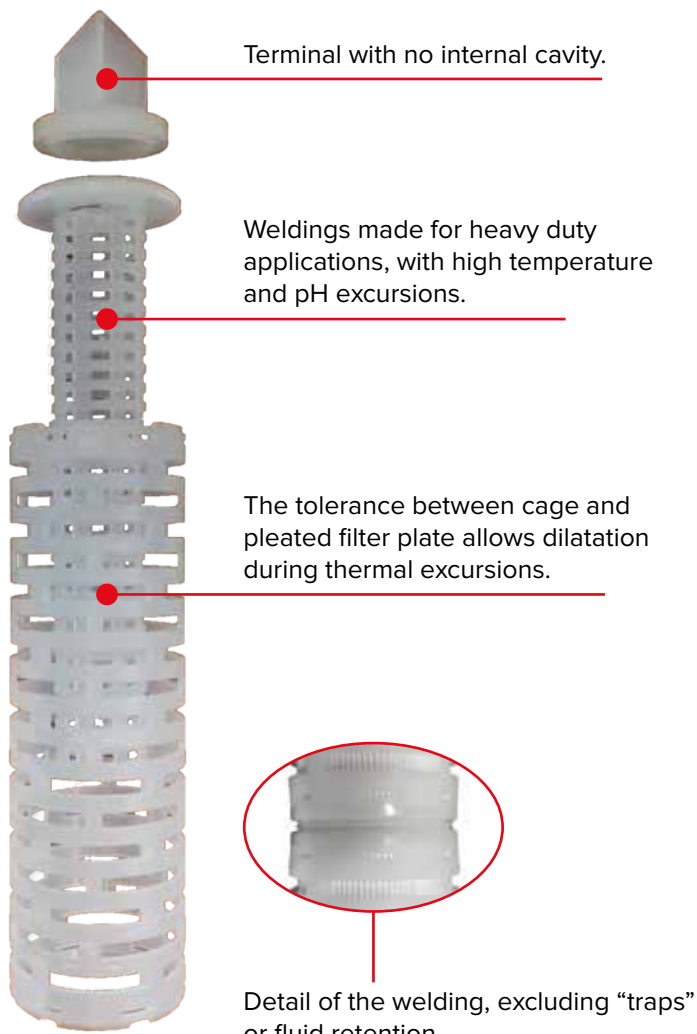
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar
Max Δp at 121°C with steam	0,3 Bar (4.3 psi)

# Regeneration and sanitation

- **FLUID CLEAN PES** cartridges can be repeatedly regenerated with hot water max (80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.
- DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

# Integrity test

		0,2 μm	0,45 μm	0,65 μm
<b>BUBBLE POINT</b>	bar	3.1	1.7	1.2
	psi	44	24	17
<b>PRESSURE TEST</b>	bar	2.5	1.4	1.0
	psi	36	20	14
<b>MAX. DIFFUSION FLOW FOR MODULE</b>	ml/min	21	21	21



Detail of the welding, excluding "traps" or fluid retention.



Filter elements are fluxed with extra pure water and then dehydrated with hot and sterile air flow.



The stainless steel ring is a reinforcement to maintain the joint size stable, it is detachable for disposal.

FLUID CLEAN PES FILTER ELEMENTS ARE PACKAGED IN A CLEAN ROOM. THE RIGID CARDBOARD PACKAGE HAS ANTI-SHOCK TERMINAL PARTICULARS.

# FLUID CLEAN PP

Pleated plate in heat-sealed polypropylene

## Technical characteristics

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- Porosity 0.6 - 1 - 3 - 5 - 10 - 20  $\mu\text{m}$ , with absolute particle degree  $\beta$  5000
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

## Retention efficiency

- Particle removal efficiency is established with the Beta ratio ( $\beta$ ):

$$\beta = \frac{\text{Number of particles upstream of filter}}{\text{Number of particles downstream of filter}}$$

The **FLUID CLEAN PP** filter cartridges are all validated with  $\beta$  5000 efficiency, which corresponds to a 99.98% particle retention.



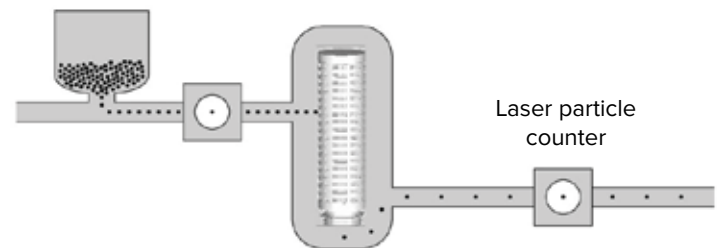
UPSTREAM PARTICLES = 100.000 units



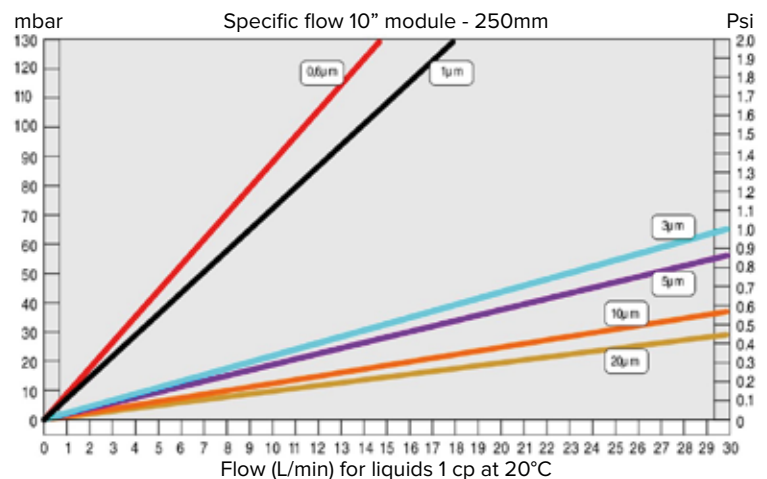
DOWNSTREAM PARTICLES	RATIO	$\beta$	EFFICIENCY
50.000	$\frac{100.000}{50.000}$	2	50%
5.000	$\frac{100.000}{5.000}$	20	95%
1.000	$\frac{100.000}{1.000}$	100	99%
100	$\frac{100.000}{100}$	1.000	99,9%
20	$\frac{100.000}{20}$	5.000	99,98%

## Validation

The particulate retention efficiency of the **FLUID CLEAN PP** filter elements is randomly tested, by performing a destruction filtration test, with a suspension of ACFTD (AC Fine Test Dust) standard particles and using in-line laser particle counters, according to ISO 4572 procedure.



- 0,6 $\mu\text{m}$
- 1 $\mu\text{m}$
- 3 $\mu\text{m}$
- 5 $\mu\text{m}$
- 10 $\mu\text{m}$
- 20 $\mu\text{m}$



## Construction materials

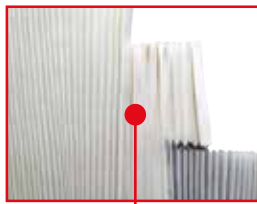
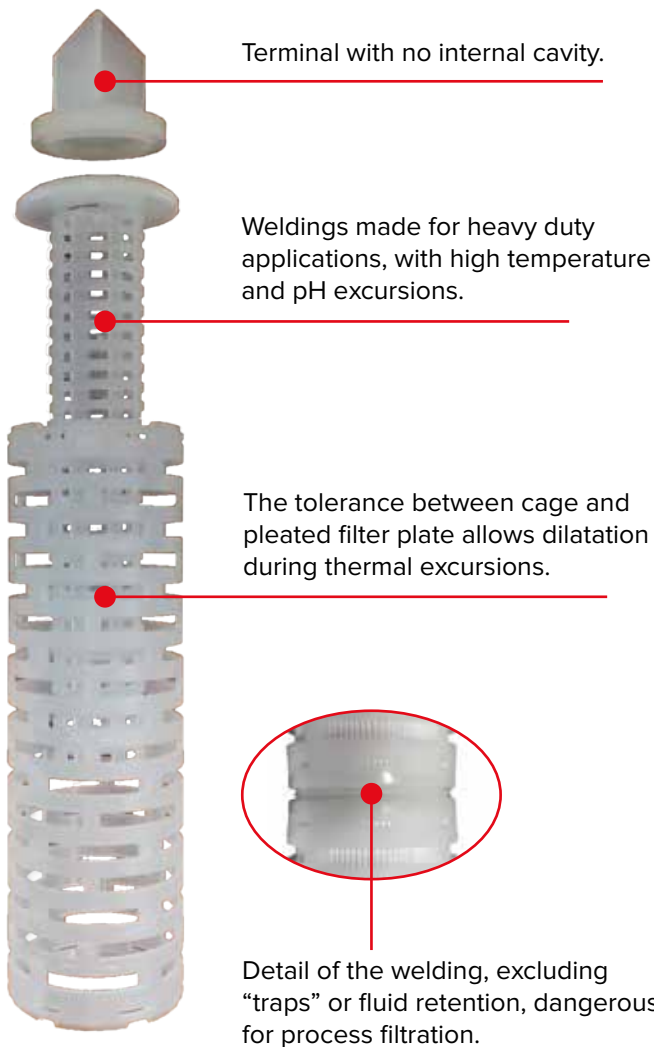
Filter plate	Pleated heat-sealed polypropylene, scalar porosity
Support and drainage layers	Polypropylene microfiber
Internal and external cage	Polypropylene
Terminal supports	Polypropylene
Standard 'O' rings	Silicone
Material coupling	Thermowelding

## Operational data

Max operating temperature	80°C
Max $\Delta p$ operating at 20°C	5 Bar (72.5 psi)
Max $\Delta p$ at 121°C with steam	0,3 Bar (4.3 psi)

## Regeneration and hygienization

- **FLUID CLEAN PP** filter elements can be repeatedly regenerated also in backflush, with hot water max 80°C, sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.



Construction suitable for backflush regeneration.



The Inox ring is a reinforcement to maintain the joint size stable, it is separable for disposal.

# HF PLEAT

High flow depth media cartridges



## Plus

- DANMIL HF Pleat, which uses high pleats, is designed to maximize the effective surface area of a single pleated filter media within the cartridge.
- Combining this design with the technique of pleating several different filter media together in a single pleat pack maximizes dirt holding capacity.
- Available in a wide variety of absolute filter media, this cartridge is constructed with EU Food grade compliant materials.
- With a high flow rate capacity, this DANMIL HF Pleat filter is the solution to achieving excellent performance while reducing filtration costs.

## Technical data

- Media: Pleated Polypropylene microfiber
- Core: Polypropylene
- Support: Polypropylene
- Outer Cage: Polypropylene
- End Caps: Polypropylene
- Gaskets: EPDM Standard
- Dimension: OD 6" and 20" - 60" length

## Operation data

- Recommended element change  $\Delta P$ : 1.5 bar
- Recommended flow rate: > 50 m<sup>3</sup>/h for 40"
- Max. operating temperature: 80 C° PP/PP  
Max.  $\Delta P$ : 3.4 bar
- Flow direction: Inside to outside

## Application

- Food & Beverage
- Water processing
- Chemicals etc.

## Part numbering system

DAHFC	40	5	PP	1	1
	Lenght	Micron	Media	Core/End Cap	Gaskets/o-rings
Product	20 = 20" 40 = 40" 60 = 60" X = Option	1 = 1 2 = 2 5 = 5 10 = 10 20 = 20 40 = 40 70 = 70 X = Option	PP = Polypropylene	1 = Polypropylene X = Option	0 = Buna N 1 = EPDM 2 = Silicone 3 = Viton® x = Option

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# FLUID CLEAN CORE

Depth filter cartridges entirely made of polypropylene

## Advantages



- DANMIL Fluid Clean Core filter cartridges combine tested depth filtration technology with a design eliminating the internal support structure in order to give a convenient, economic and ecological solution to liquid clarification applications.
- The filter element with a large diameter has a polypropylene filter medium with a low flow resistance.
- The Fluid Clean Core cartridges are made by different polypropylene filter layers thermally welded with no use of chemical adhesives.
- The cartridge is built according to a filtration gradient from the outside to the inside.
- The cartridges are granted “silicon free” and do not release any glue, adhesive or additive.

## Technical data

- Filter media: polypropylene
- Supports: polypropylene
- Gaskets: on demand

## Operational data

- Max. temperature: 80 C °
- Max. ΔP: 2 bar at 20° C
- Sanitation with hot water: 70° C

## Applications

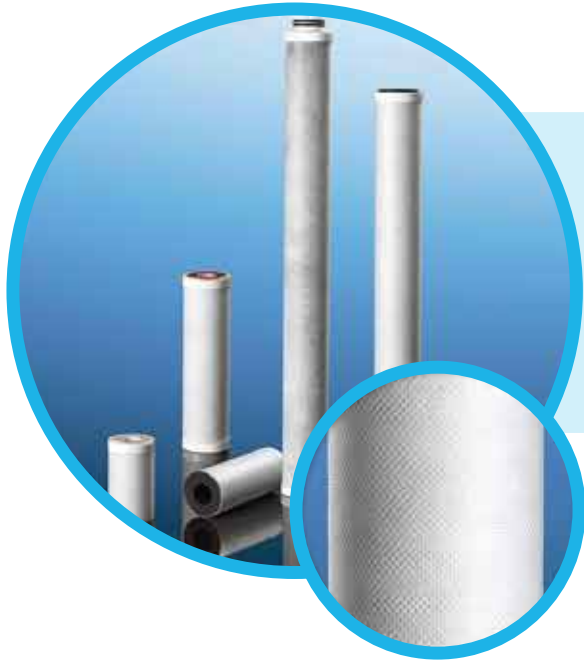
- Pre-filter for membrane cartridges for food applications, such as drinking mineral and process water.
- Depth pre-filter for filtration in intake, reverse osmosis or tangential ultra-filtration.
- Final filtration for liquids such as chemicals, cosmetics, electronic or photographic materials, paints.

## Part numbering system

FLUID CLEAN CORE	0100	30	7	C	S
	Filtration rating	Height	End fitting	Cage	Gaskets/o-rings
identification: <b>FLUID CLEAN CORE</b>	0100 = 1 μm 0300 = 3 μm 0500 = 5 μm 100 = 10 μm 200 = 20 μm 500 = 50 μm 900 = 90 μm	10 = 10" 250 mm 20 = 20" 500 mm 30 = 30" 750 mm 40 = 40" 1000 mm	K = No fitting D = DOE 2 = 226/flat 3 = 3 bayonet 222/flat 5 = 222/flat 7 = bayonet 226/fin 0 = 222/flat	C = With cage Y = No cage	O = Buna N E = EPDM S = Silicone V = Viton® x = Altre
	<small>VITON® is a registered trademark of E.I. du Pont de Nemours &amp; Co. Inc.</small>				

# HOSPICARB CB

Carbon block cartridge



## Benefit

- DANMIL HOSPICARB CB reduces chlorine, organic chemicals related to taste and odour.
- 0.5 - 10 micron particle removing.
- Up to 20 times better service and capacity than Granulated AC carbon.
- Sanitary end caps and gaskets.
- No release of carbon fines due to start up.
- No channelling or bypassing like the case with GAC, this due to a rigid structure.
- Standard elements are in 2.5" diameter - BB version is available.

## Operational limits

- Max operating temperature: standard up to 65 °C; special design on request up to 80 °C
- Recommended Differential Pressure for element change out: 1.5 bar
- Recommended life time: 6 weeks to max. 3 months
- Recommended flow rate: 5 lpm/10" element give < 0.1 bar initial delta P

## Material of construction

- Coconut Shell Carbon & Coal
- Carbon weight on 2.5" x 10": 360 gr.
- Outer prefilter media

## Applications

- Water purification systems
- Industrial effluent water treatment
- Food service
- Product rinse
- Decolourisation
- Process water and pre-treatment of RO systems

## Part numbering system

DACB	09	M	2	0	1
	Lenght	Grade	Micron rating	End Cap	Gaskets/o-rings
<b>Product</b>	09 = 9.75" 10 = 9.875" 11 = 10" 19 = 19.75" 20 = 20" 29 = 29.5" 30 = 30" 39 = 39.25" 40 = 40" x = Option	M = Carbon Block	1 = fine 2 = 10 general	0 = DOE (standard) 2 = 226/flat 3 = 222/flat 7 = 226/flat 8 = 222/fin A = Option	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® x = Option

VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.



## Benefits

- DANMIL HOSPICARB FC is a dual purpose filter of high quality activated carbon impregnated onto a support fiber media.
- Designed and developed for carbon treatment as well as particle removal for various liquids.
- Effective in removing or reducing organic chemicals, chlorine, odours and taste.

## Operational limits

- Max operating temperature: 65 °C
- Recommended flow rate: Maximum 7 lpm pr. 10" element

## Material of construction

- Activated carbon fiber
- Support media and end caps in polypropylene

## Application

- Water purification system
- Industrial effluent water treatment
- Food service
- Product rinse
- Decolourisation
- Process water and pretreatment of RO systems

## Part numbering system

DAFC	09	AL	O	E
	Length	Grade	End Cap	Gaskets/o-ring
Product	09 = 9.75" 10 = 9.875" 11 = 10" 19 = 19.75" 20 = 20" 29 = 29.5" 39 = 39.25" 40 = 40" x = Option	AL = Carbon Cloth PH = Pharma	0 = DOE (Standard) 2 = 226/flat 3 = 222/flat 7 = 226/fin 8 = 222/fin X = Plane end A = Option	N = Buna N E = EPR S = Silicone V = Viton® x = Option

VITON® è un marchio registrato proprietà di E.I. duPont de Nemours & Co. Inc.

# PES CAPSULE PH

PES “polyethersulfone” membrane capsule  
with polypropylene supports and construction

## Plus



- DANMIL PES Capsule PH meets the needs of the pharmaceuticals, cosmetics, food and beverage, semiconductors and chemical industries.
- All capsules are constructed and assembled in a clean room according to cGMP guidelines to assure capsule filters of high quality.
- The construction materials are chemically and biologically inert in accordance with F.D.A. and U.S.P.
- Materials meet the requirements of the USP Class VI.
- PES membrane filter media provides superior flow rates and long service life.
- The PES membrane is permanently hydrophilic and offers excellent chemical compatibility.
- Stringent quality control standards guarantee effective, consistent filtration performance and controlled pores size.
- All grades are 100% traceable.
- Can be autoclaved at 135 °C.
- Absolute Removal and bacteria retention in liquid according to HIMA methodology.
- 107 CFU/cm<sup>2</sup> *Brevundimonas diminuta*.
- Integrity controlled.
- No additives, surfactants, or post treatments.
- Low filter extractable and Non-shedding.
- Low protein adsorption or binding.
- Broad chemical and solvent compatibility.

## Maximum Operating Differential Pressure

- Liquid Service: 5.0 bar @ 24 °C

## Applications

- Pharmaceutical: water pre-filtration, biological fluids, sera, vaccines, ophthalmic water, etc.
- Food and beverage: beer, wine, water, etc.
- Cosmetics: fragrances, lotions, creams, shampoos.
- Semiconductor: photo resists, RO and DI water, solvent, coatings.
- Industrial: solvent, paints, inks, oils, chemicals.

## Part numbering system

DA25C	H	S	S	006	-
	Size	Connection on inlet	Connection on outlet	Filtration rating	Spec
<b>Product</b>	L = Little H = Half S = Standard D = Double E = 10" x = Option	S = 1.5" Sanitary Flange (TC) H = 1/2" hosebarb P = 1/4" NPT 1 = 1/4" hosebarb 2 = 3/8" hosebarb 3 = 1/4" - 3/8" Stepped hosebarb 4 = 1/4" MNPT 5 = 3/8" FNPT 6 = 3/8" MNPT x = Option	S = 1.5" Sanitary Flange (TC) H = 1/2" hosebarb P = 1/4" NPT 1 = 1/4" hosebarb 2 = 3/8" hosebarb 3 = 1/4" - 3/8" Stepped hosebarb 4 = 1/4" MNPT 5 = 3/8" FNPT 6 = 3/8" MNPT x = Option	105 = 0.05 µm 001 = 0.10 µm 002 = 0.20 µm 004 = 0.45 µm 005 = 0.50 µm 006 = 0.65 µm 008 = 0.80 µm 012 = 1.20 µm	-- = No vent S = Silicon E = EPDM V = Viton® x = Option

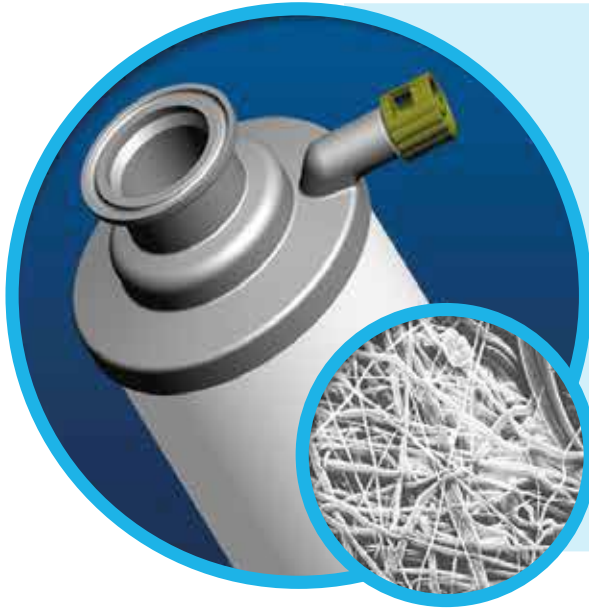
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# POLY Big Cap

100% polypropylene filter cartridge.  
Pleated polypropylene depth filter media with Polypropylene supports

## Benefits



- DANMIL POLY Big Cap meets the needs of the pharmaceutical, cosmetics, food and beverage, semiconductor and chemical industries.
- All cartridges are constructed and assembled in a clean room according to cGMP guidelines to assure filter elements of high quality.
- The construction materials are chemically and biologically inert in accordance with F.D.A. and U.S.P.
- Materials meet the requirements of the USP Class VI.
- Polypropylene filter media and support drainage offer superior strength and contaminant capacity. All this build in a full size Polypropylene Big Cap.
- Strength quality control standards guarantee effective, consistent filtration performance and controlled pore size.
- Traceability: all grades are 100% traceable.
- Sterilizable: can be autoclaved or steam sterilized.
- Wide solvent compatibility: suitable for many solvents systems.
- Absolute removal in liquid.

## Maximum Operating Differential Pressure

- Forward: 5.5 bar @ 24 °C
- Reverse: 2.8 bar @ 24 °C
- Recommended changeout: 1.5 bar

## Applications

- Pharmaceutical: water pre-filtration, biological fluids, sera, vaccines, ophthalmic water, etc.
- Food and beverage: beer, wine, water, etc.
- Cosmetics: fragrances, lotions, creams, shampoos.
- Semiconductor: photo resists, RO and DI water, solvent, coatings.
- Industrial: solvent, paints, inks, oils, chemicals.

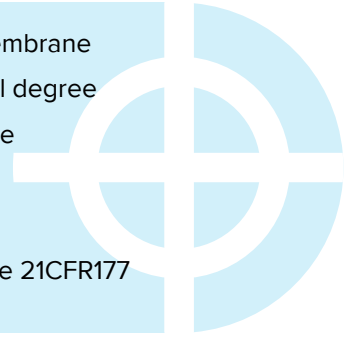
## Part numbering system

DA22C	1	S	S	006	2
	Lenght	IN Connection	OUT Connection	Filtration rating	O - rings
<b>Product</b>	1 = 10"	S = 1,5" Sanitary Flange X = Option	S = 1,5" Sanitary Flange Y = 1,5" Sanitary Flange with SS insert X = Option	002 = 0.25 µm 003 = 0.3 µm 006 = 0.6 µm 010 = 1.0 µm 012 = 1.2 µm 025 = 2.5 µm 050 = 5.0 µm 100 = 10 µm 200 = 20 µm 400 = 40 µm 700 = 70 µm	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® X = Option

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### Technical characteristics

- Expanded polytetrafluoroethylene (PTFE) membrane
- Absolute porosity 0,2µm with microbiological degree in liquid corresponding to 0,01µm with degree particulate in gas
- Membrane integrity testable repeatedly
- All materials in accordance with FDA directive 21CFR177



### Microbiological retention

- Logarithmic reduction (LRV) is calculated as follows:

$$LRV = \log_{(10)} = \frac{\text{Number of microorganisms in the sample}}{\text{Number of microorganisms in the filtered product}}$$

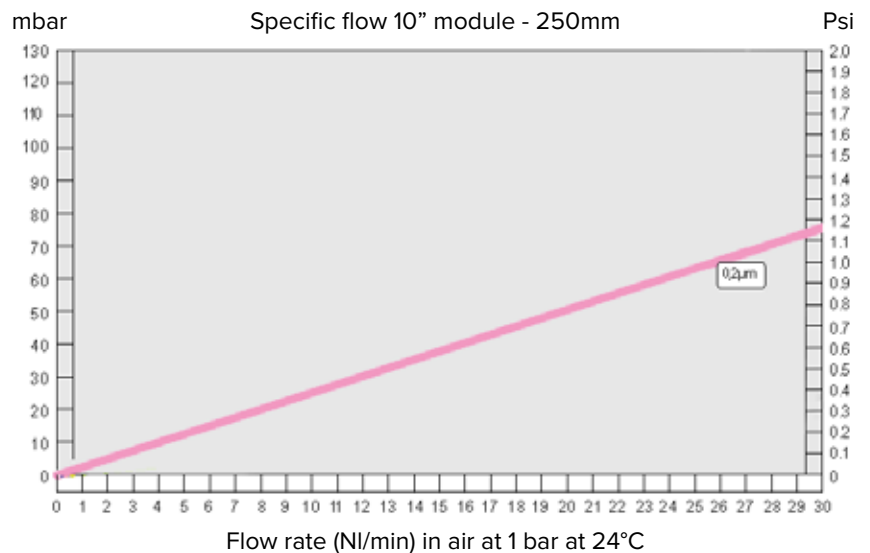
- The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

	0,2 µm
<i>P. Diminuita</i>	S
<i>L. Oenos</i>	S
<i>Acetobacter</i>	S
<i>Brettanomyces</i>	S
<i>S. Cerevisiae</i>	S

S = Sterile

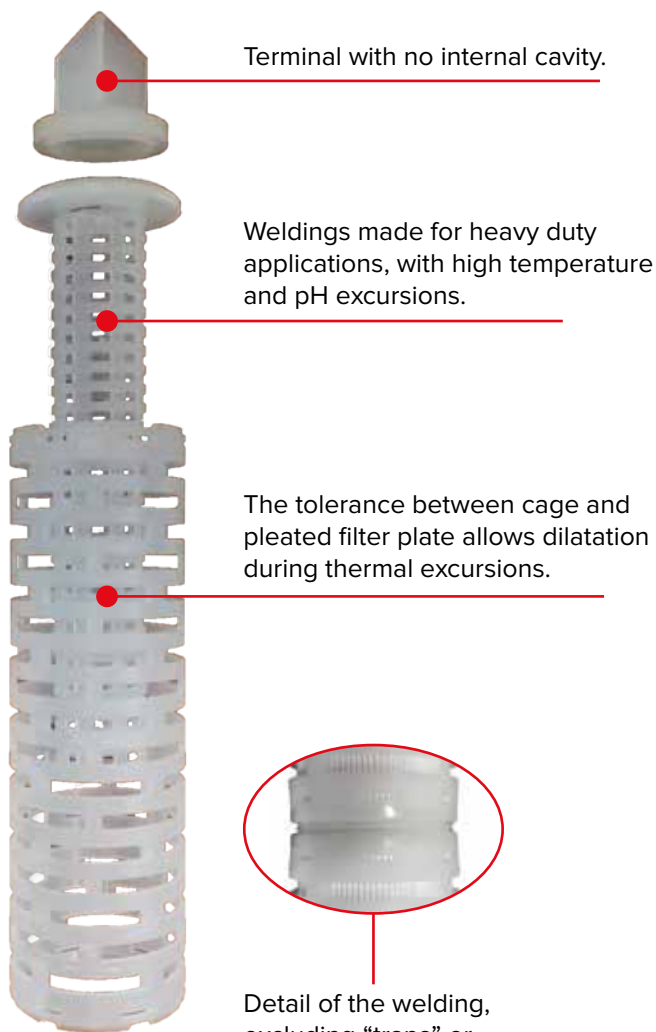
### Validation

- The membranes used in **SERVICE II** cartridges are tested and validated.
- All **SERVICE II** cartridges are subjected to a integrity test.
- This exclusive DANMIL validation system ensures the absolute integrity of the filter element.



■ 0,2µm





Detail of the welding, excluding "traps" or fluid retention. Suitable



Suitable for air and technical gases sterilization.

## Construction materials

Filter membrane	Expanded hydrophobic polytetrafluoroethylene (PTFE)
Support and drainage layers	Polypropylene and polyethylene
Internal and external cage	Polypropylene
End supports	Polypropylene
Standard 'O' rings	EPDM
Material coupling	Thermowelding

## Operational data

Filter surface	0,6m <sup>2</sup> (6,5ft <sup>2</sup> ) for 250 mm module 10"
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72.5 psi)
Max Δp at 121°C with steam	0.3 Bar (7 psi)

## Sanitation

- **SERVICE II** can be repeatedly sanitized with steam up to 121°C.
- DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

## Integrity test

		0,2 μm
BUBBLE POINT	bar	1.40
	psi	20.0

- Warning: wetting to be carried out with 100% isopropyl alcohol.

**SERVICE II FILTER ELEMENTS ARE PACKED IN AN ASEPTIC ENVIRONMENT. THE REGID CARDBOARD PACKAGE HAS PARTICULAR SHOCKPROOF TERMINALS.**

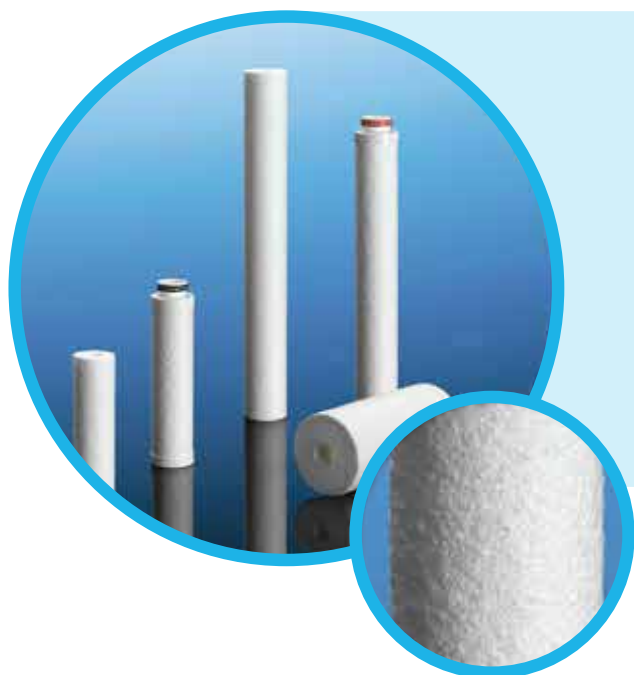
# SPUN ABSOLUTE

Absolute rated depth cartridge

AEB Group company



## Benefits



- DANMIL SPUN ABSOLUTE is an absolute rated cartridge, which fulfills the demands the Industry requires to an absolute depth filter.
- The construction consists of numerous, distinctive filter zones with coarser outer layers acting as pre-filters for the tighter, absolute rated central zone.
- This removal profile produces an element possessing a high voids volume, which benefits the user high flow rates, low pressure loss, high dirt holding capacity and long life.
- The thermally bonded media also eliminates fibre migration and resists the tendency to unload during service.
- All cartridges are produced in 100% polypropylene and nylon are produced in one piece to offer max. strength during operation.
- Efficiency Beta  $\geq$  5000.

## Advantages

- Low differential pressure.
- Longer lifetime and reduced cost.
- High dirt holding capacity. 40" in one length.
- PP produced of Food grade compliant material.
- COC is standard for all critical installation.

## Application

- Food & Beverage
- Pharmaceutical
- Electronics
- Water treatment
- Process water, polishing & final filtration
- Membrane pre-filtration, clarification and chemicals
- Membrane protection

## Part numbering system

DAA	40	P	1	25	3	O	X
	Lenght	Media	Dia	Micron	End Cap	Gaskets/o-ring	Outer net
Product	09 = 9.75" 10 = 9.875" 11 = 10" 19 = 19.75" 20 = 20" 29 = 29.5" 39 = 39.25" 40 = 40" x = Option	P = Polipropilene N = Nylon	1 = 63	A5 = 0.5 01 = 1 03 = 3 05 = 5 10 = 10 25 = 25 50 = 50 75 = 75 99 = 100 x = Option	0 = DOE (standard) 2 = 226/flat 3 = 222/flat 7 = 226/fin 8 = 222/fin X = Plain end A = Option	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® 5 = TEV 6 = TES X = none A = Option	X = Standard no outer net

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# SPUN ABSOLUTE II

Absolute rated depth cartridge

## Benefits



- DANMIL SPUN ABSOLUTE II is an absolute rated cartridge, which fulfills the demands the Industry requires to an absolute depth filter.
- The construction consists of numerous, distinctive filter zones with coarser outer layers acting as pre-filters for the tighter, absolute rated central zone in support of a inner core.
- This removal profile produces an element possessing a high voids volume, which benefits the user high flow rates, low pressure loss, high dirt holding capacity and long life.
- The thermally bonded media also eliminates fibre migration and resists the tendency to unload during service.
- All cartridges are produced in 100% polypropylene and nylon are produced in one piece to offer max. strength during operation.
- Efficiency Beta  $\geq$  5000.

## Advantages

- Low differential pressure.
- Longer lifetime and reduced cost.
- High dirt holding capacity.
- 40" in one length.
- Inner core to improve strength.
- PP produced of Food grade compliant material.
- COC is standard for all critical installation

## Application

- Food & Beverage
- Pharmaceutical
- Chemicals
- Electronics
- Water treatment
- Process water, polishing & final filtration
- Membrane pre-filtration, clarification and chemicals
- Membrane protection

## Part numbering system

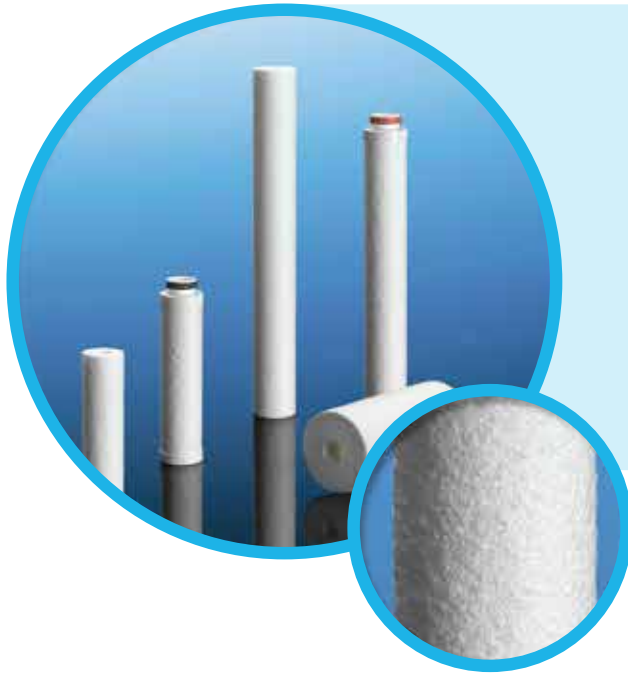
DAAIL	40	P	1	25	3	0	1
	Lenght	Media	Dia	Micron	End Cap	Gaskets/o-ring	Outer net
Product	09 = 9.75" 10 = 9.875" 11 = 10" 19 = 19.75" 20 = 20" 29 = 29.5" 30 = 30" 39 = 39.25" 40 = 40" x = Option	P = Polipropilene N = Nylon	1 = 63	A5 = 0.5 01 = 1 03 = 3 05 = 5 10 = 10 25 = 25 50 = 50 75 = 75 99 = 100 x = Option	0 = DOE (standard) 2 = 226/flat 3 = 222/flat 7 = 226/fin 8 = 222/fin X = Plain end A = Option	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® 5 = TEV 6 = TES X = none A = PE soft gasket	1 = Standard outer net X = No outer net

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# SPUN NOMINAL

Nominal rated depth cartridge

## Benefits



- DANMIL SPUN NOMINAL precision depth filter cartridges are manufactured to give a considerable dirt holding capacity coupled with high flow rates, low pressure drop and long service life.
- Elements can, under certain conditions, be backwashed, but are generally treated as "disposable" element.
- All cartridges are manufactured to our in-house quality standards and produced of FDA approved Polypropylene or Nylon. This ensures reproducibility of product, first class performance and competitive price.
- Consist of multi layer of fibre media, providing each element rating with its own pattern and performance.
- This has the effect of increasing the working area of the element thus providing a higher dirt holding capacity whilst maintaining the rigid structure.

## Advantages

- Low differential pressure
- Longer lifetime and reduced cost
- High dirt holding capacity  
60" in one length
- COC option for critical installations
- Cartridges with COC are individually inspected by our QA

## Application

- Food & Beverage
- Pharmaceutical
- Chemicals
- Water treatment
- Process water & Clarification filter
- Pre-filter, membrane protection and condensate and chemicals
- Cleaning and pre-filter
- Water pre-filter

## Part numbering system

DAN	40	P	1	25	3	0	
	Lenght	Media	Dia	Micron	End Cap	Gaskets/ o-ring	
<b>Product</b>	05 = 5" 09 = 9.75" 10 = 9.875" 11 = 10" 19 = 19.75" 20 = 20" 21 = 520 mm. 29 = 29.5" 30 = 30" 39 = 39.25" 40 = 40" x = Option	P = Polipropilene N = Nylon	1 = 63 2 = 100	A5 = 0.5 01 = 1 03 = 3 05 = 5 10 = 10 25 = 25 50 = 50 75 = 75 99 = 100	0 = DOE 2 = 226/flat 3 = 222/flat 7 = 226/fin 8 = 222/fin X = Plain end (standard) A = Option	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® X = none A = option	<b>S P E C I A L  C O D E</b>
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## Plus

- DANMIL STEEL I is all made of AISI 316 L Stainless Steel.
- Excellent mechanical strength and chemical compatible.
- Four layers construction.
- One microfiber media with 3 woven wire mesh support welded to the end caps.
- Up to 16 bar differential pressure.
- Wide temperature tolerance.
- Regenerable by chemicals, mechanical or thermally.
- All grades are integrity tested and have 100% traceability.

## Operational limits

- Max operating temperature: 370 °C
- Minimum operating temperature: - 260 °C
- Maximum differential pressure: 16 bar

## Application

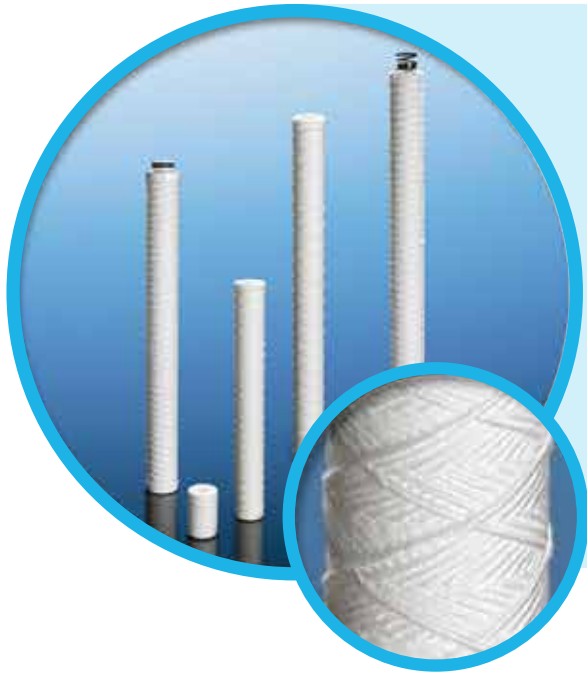
- High temperature process
- High viscose fluids

## Part numbering system

DA21	1	0	7	10	005	2	X
	Insert		Cartridge type	Lenght	Filtration rating	Gaskets/ o-ring	Gasket Thickness DOE
<b>Product</b>	1 = Standard		1 = DOE (double open end) 2 = 226/flat 3 = 222/flat 5 = 3 bayonet 222/fin 6 = 020 (internal) flat 7 = 226/fin 8 = 222/fin	10 = 10" 20 = 20" 30 = 30" 40 = 40"	005 = 0.50 µm 010 = 1.00 µm 030 = 3.00 µm 050 = 5.00 µm 100 = 10.0 µm 200 = 20.0 µm 400 = 40.0 µm	0 = Buna N 1 = EPR 2 = Silicone 4 = Viton® X = Option	1 = 0.200" N = None

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### Benefits



- DANMIL TEX precision wound depth filter cartridges are manufactured to give a considerable dirt holding capacity coupled with flow rates and low pressure drop.
- Elements can, under certain conditions, be backwashed, but are generally treated as »disposable« elements.
- All cartridges are manufactured to in-house quality standards in a modern, purpose built factory.
- This ensures reproducibility of product, first class performance and competitive pricing.
- Consists of a perforated support core of plastic or metal onto which yarn is wound at a pre-set rate, providing each element rating with its own distinctive winding pattern and performance. During the winding process the yarn is usually brushed (or napped).
- This has the effect of increasing the working area of the element thus providing a higher dirt holding capacity whilst maintaining the rigid structure.

### Technical data

- Standard cartridge is a polypropylene (PP) on a pp, tin or stainless steel core.
- Other fibres such as polyester, cotton, nylon and rayon can operate at higher temperatures and have differing chemical compatibility
- For very high temperatures and for very strong oxidizing agents, baked glass fibre elements are used.

### Advantages

- Low differential pressure
- Longer lifetime and reduced cost
- High dirt holding capacity
- 40" in one length
- Inner core in 100% PP
- New FDA approved endcaps
- COC option for critical installations
- Cartridges with COC are individually inspected by our QC

### Application

- Food & Beverage
- Pharmaceutical
- Chemicals
- Water treatment
- Process water & Clarification filter
- Pre-filter, membrane protection and condensate and chemicals
- Cleaning and pre-filter
- Water pre-filter
- Off-shore
- Seawater and Cooling water

### Part numbering system

DAE	40	20	02	2	0	7	S	X
	Lenght	Micron	Yarn	Core	Dia	End Cap	Gasket/o - rings	
Product	04 = 4"	A5 = 0.5	01 = Polyester	1 = Polyester	1 = 62	0 = DOE	N = Nitrile	S P E C I A L  C O D E
	05 = 5"	01 = 1	02 = Polypropylene	2 = Polypropylene	2 = 50	(standard)	E = EPDM	
	09 = 9.75"	03 = 3	03 = Polypropylene	3 = 304 S.Steel	6 = 100	2 = 226/flat	S = Silicone	
	10 = 9.875"	05 = 5	Fibrillated	5 = 316 S.Steel	7 = 66	3 = 222/flat	V = Viton®	
	11 = 10"	10 = 10	04 = Bleached Cotton	7 = Tinned S.		7 = 226/fin	X = Option	
	19 = 19.75"	20 = 20	06 = Glass Fibre			8 = 222/fin	Digit only apply if cartridge is with o-ring/gasket	
	20 = 20"	25 = 25	07 = Nylon					
	29 = 29.5"	50 = 50	08 = Rayon/Viscose					
	30 = 30"	75 = 75	09 = Washed					
	39 = 39.25"	99 = 100	Polypropylene					
	40 = 40"							
	x = Option							

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