

AEB Group company



FILTER CARTRIDGES



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ABSOLUTE PES

Asymmetric membrane in hydrophilic polyethersulfone

Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.2 - 0.8 - 1.2 μm , 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:

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

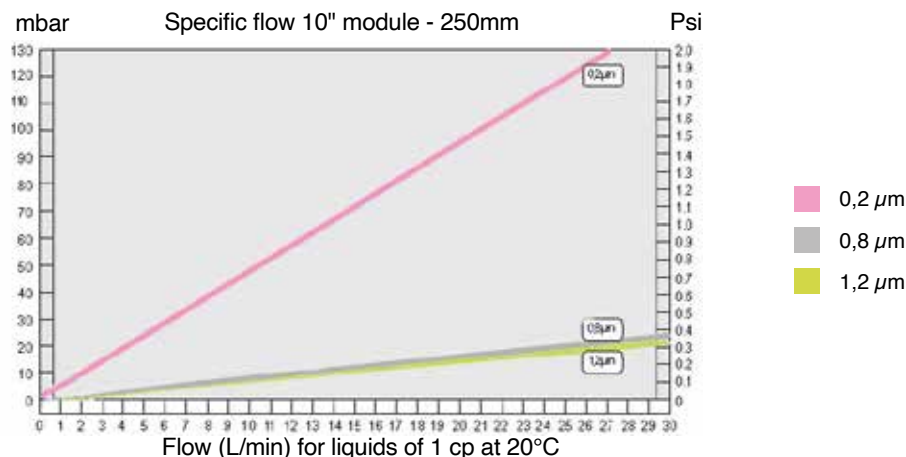
The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

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

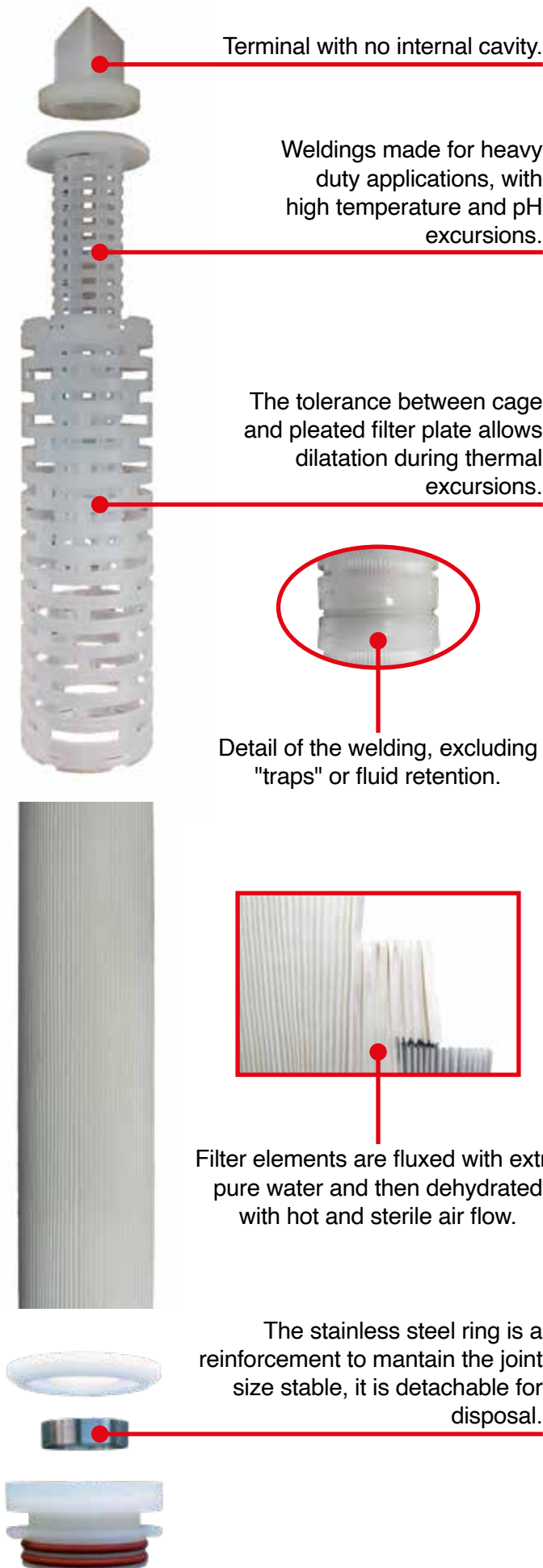
ABSOLUTE PES cartridges can be repeatedly regenerated with hot water (max 80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.

DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

Integrity test

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

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



ABSOLUTE PES PLUS

Asymmetric membrane in hydrophilic polyethersulfone

Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.45 - 0.65 μm 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:

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

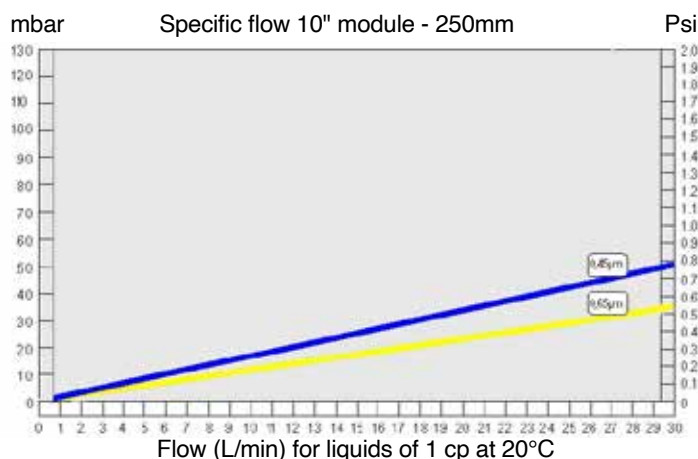
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	0,45 μm	0,65 μm
<i>P. Diminuta</i>	R	
<i>L. Oenos</i>	S	R
<i>Acetobacter</i>	S	R
<i>Brettanomyces</i>	S	R
<i>S. Cerevisiae</i>	S	S

S = Sterile R = Accentuated reduction

Validation

- The membranes used in **ABSOLUTE PES** 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	0,8 m ² 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

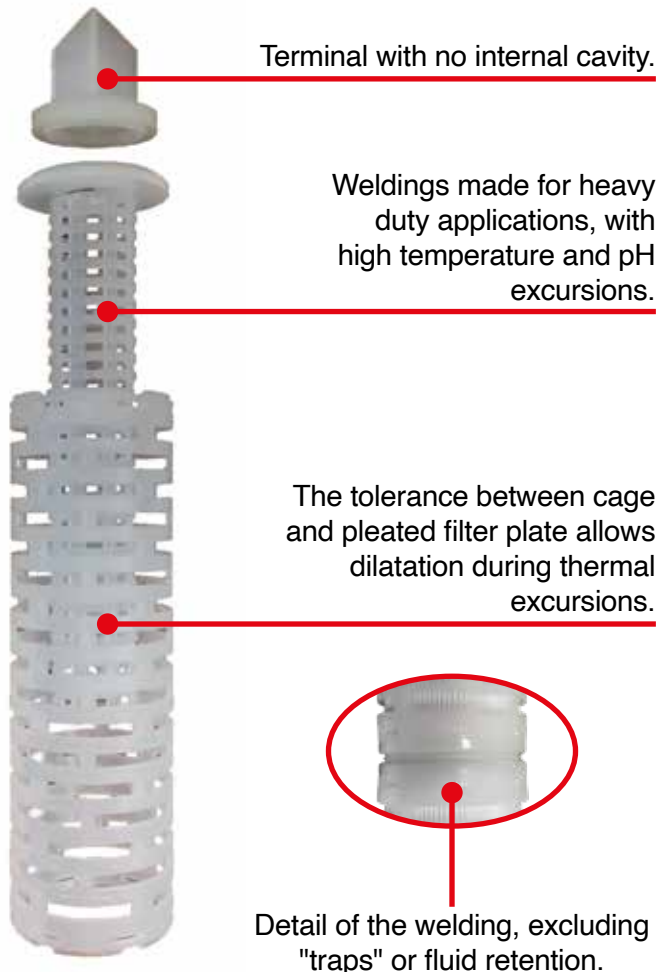
ABSOLUTE PES PLUS cartridges can be repeatedly regenerated with hot water (max 80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.

DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

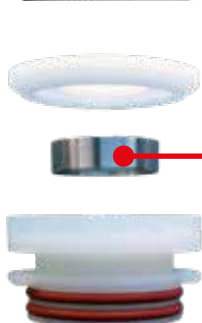
Integrity test

		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)	mL/min	29	29

ABSOLUTE PES PLUS 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.



ABSOLUTE PP

Pleated plate in heat-sealed polypropylene

Technical characteristics

- Thermo-welded polypropylene filter media, with no electric charge
- Porosity 0.6 - 0.8 - 1 - 3 - 5 - 10 - 20 μm , with absolute particle degree β 5000
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

Retention efficiency

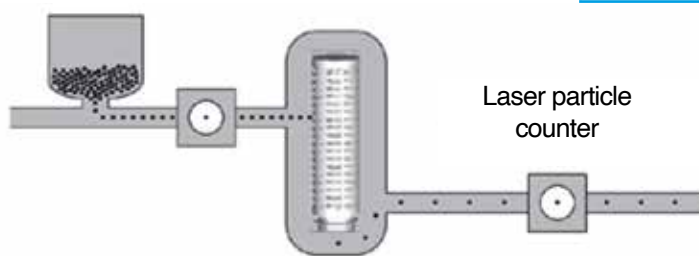
Particle removal efficiency is established with the Beta ratio (β):

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

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

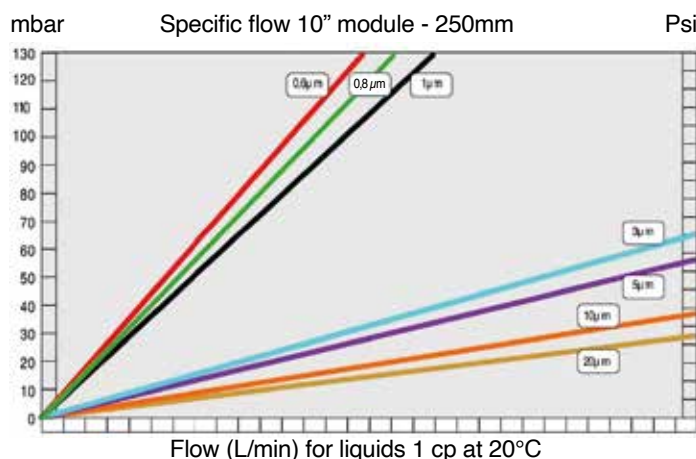
DOWNSTREAM PARTICLES	RATIO	β	EFFICIENCY
50.000	$\frac{100.000}{50.000}$	2	50%
5.000	$\frac{100.000}{5.000}$	20	90%
1.000	$\frac{100.000}{1.000}$	100	95%
100	$\frac{100.000}{100}$	1.000	99,9%
20	$\frac{100.000}{20}$	5.000	99,98%

UPSTREAM PARTICLES = 100.000 units



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 μm
- 0,8 μm
- 1 μm
- 3 μm
- 5 μm
- 10 μm
- 20 μm

Construction materials

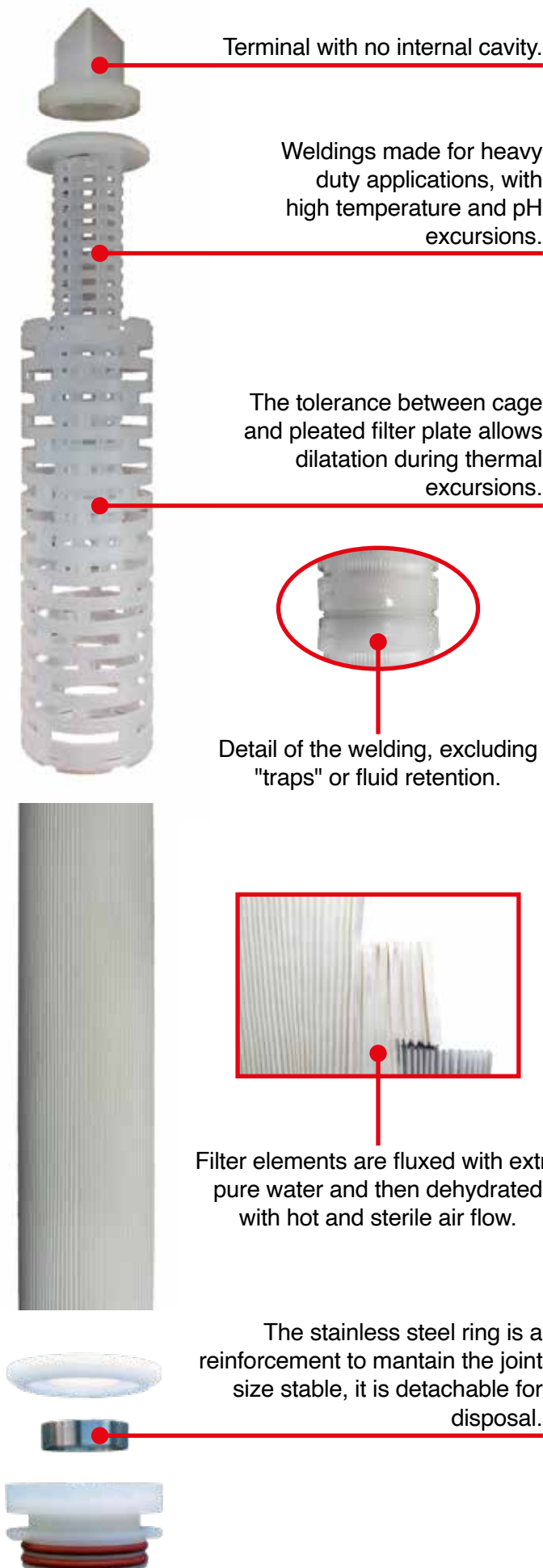
Filter plate	Pleated heat-sealed polypropylene, scalar porosity
Support and drainage layers	Polypropylene microfiber
Internal and external cage	Polypropylene
Terminal supports	Polypropylene
Standard 'O' rings	Silicone
Material coupling	Thermowelding

Operational data

Filter surface	From 0,45 m ² (4,8 ft ²) to 0,6 m ² (6,5 ft ²) 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.



ABSOLUTE PP MEMBRAN PROTECT

Dedicated pre-filter for membrane protection

Technical characteristics

- Pre-filter ideal for the protection of the final membranes
- Removal of contaminants before the final filter, to extend the life of the membrane filter cartridges
- 0.4 μm porosity with absolute particle degree β 5000
- Polypropylene six-layer graduated density structure
- Reduction of filtrability indexes
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

Retention efficiency

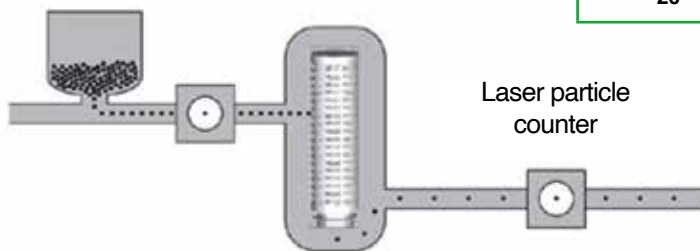
Particle removal efficiency is established with the Beta ratio (β):

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

The **ABSOLUTE PP MEMBRAN PROTECT** filter cartridges are all validated with β -ratio 5000 efficiency, which corresponds to a 99.98% particle retention.

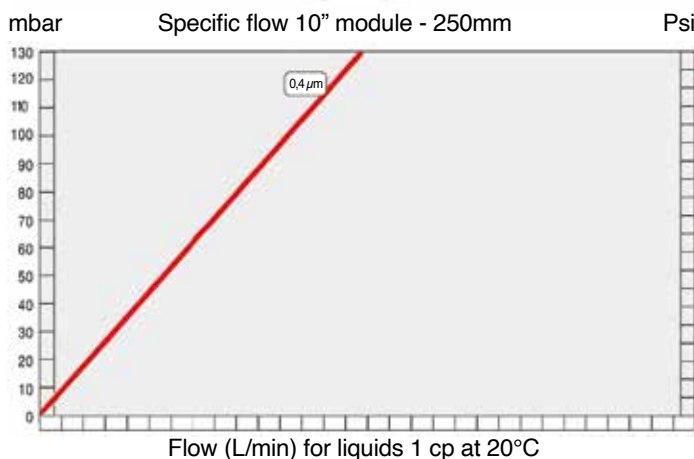
DOWNSTREAM PARTICLES	RATIO	β	EFFICIENCY
50.000	$\frac{100.000}{50.000}$	2	50%
5.000	$\frac{100.000}{5.000}$	20	90%
1.000	$\frac{100.000}{1.000}$	100	95%
100	$\frac{100.000}{100}$	1.000	99,9%
20	$\frac{100.000}{20}$	5.000	99,98%

UPSTREAM PARTICLES = 100.000 units



Validation

The particulate retention efficiency of the **ABSOLUTE PP MEMBRAN PROTECT** 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.



■ 0,4 μm

Construction materials

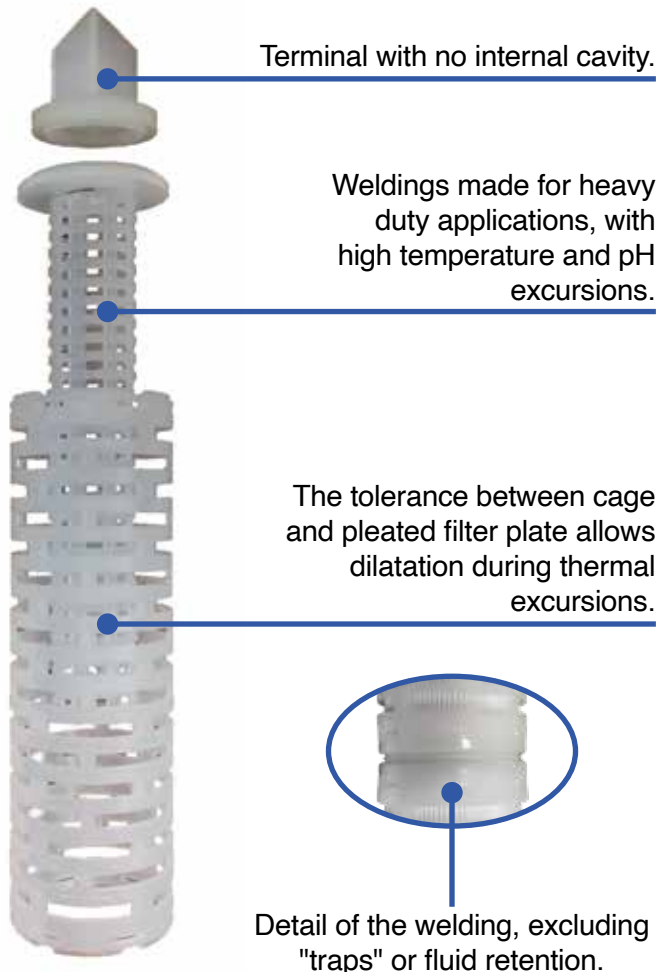
Filter plate	Pleated heat-sealed polypropylene, scalar porosity
Support and drainage layers	Polypropylene microfiber
Internal and external cage	Polypropylene
Terminal supports	Polypropylene
Standard 'O' rings	Silicone
Material coupling	Thermowelding

Operational data

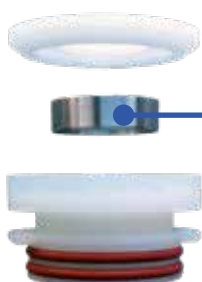
Filter surface	0,6 m ² (6,5 ft ²) for a 250 mm module (10")
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72,5 Psi)
Max Δp at 121°C with steam	0,3 Bar (4,3 Psi)

Regeneration and hygienization

ABSOLUTE PP MEMBRAN PROTECT 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.



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.

M3 HIGH PERFORMANCE

High-capacity prefilter alternative to traditional cellar filtration



Technical features and benefits

The **M3 HIGH PERFORMANCE** high-capacity cartridge is distinguished by its radial pleating and high filter surface area. Its special features ensure numerous advantages:

- Depth filtration with high filtering surface area
- High retention capacity of suspended solids, ensuring high performance, durability and lower costs
- Faster replacement of filter elements
- Fewer o-rings and reduced risk of by-pass
- Significantly lower disposal costs compared to cartridges considering the same filter surface area
- Broad chemical compatibility for filter element regeneration
- FDA-compliant polypropylene construction
- High retention efficiency for quality filtration
- Choice of different micrometers
-



Upper terminal



Cage and pleating



Adapter

Construction materials

Filter media	Polypropylene with radial pleating
Support and drainage layers	Polypropylene
Internal and external cage	Polypropylene
End supports	Polypropylene
'O' rings	Buna-N Standard Viton, EPR, Silicone
Material coupling	Thermowelding

Operational data

Max operating temperature	82°C
Max Δp	3,4 Bar
Recommended initial ΔP	$\leq 0,07$ bar
Limit ΔP for filter element change	2,5 bar
Filtration flow	Outdoor / Indoor
Recommended flow rate	40 hL/hour per 40" element

Regeneration and sanitation

M3 HIGH PERFORMANCE 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.

M3 HIGH PERFORMANCE FILTER ELEMENTS ARE PACKAGED IN A CLEAN ROOM. THE RIGID CARDBOARD PACKAGE HAS ANTI-SHOCK TERMINAL PARTICULARS.

FLUID CLEAN PES

Asymmetric membrane in hydrophilic polyethersulfone

Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.2 - 0.45 - 0.65 μm , 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:

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

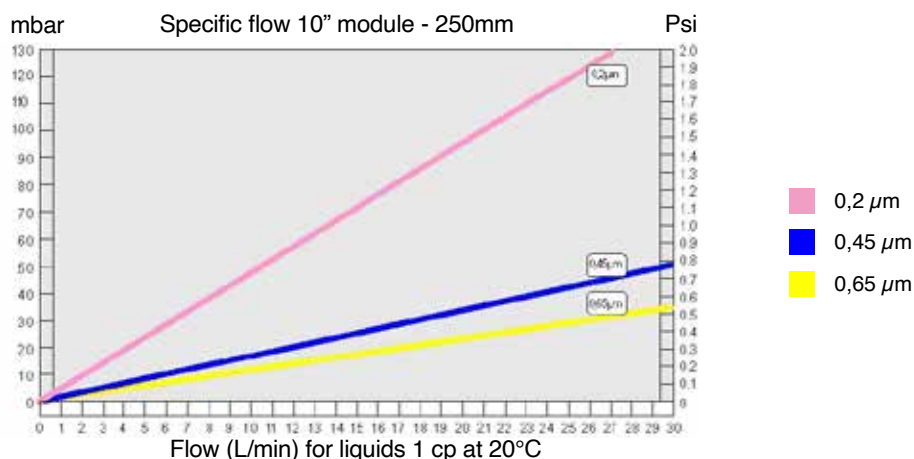
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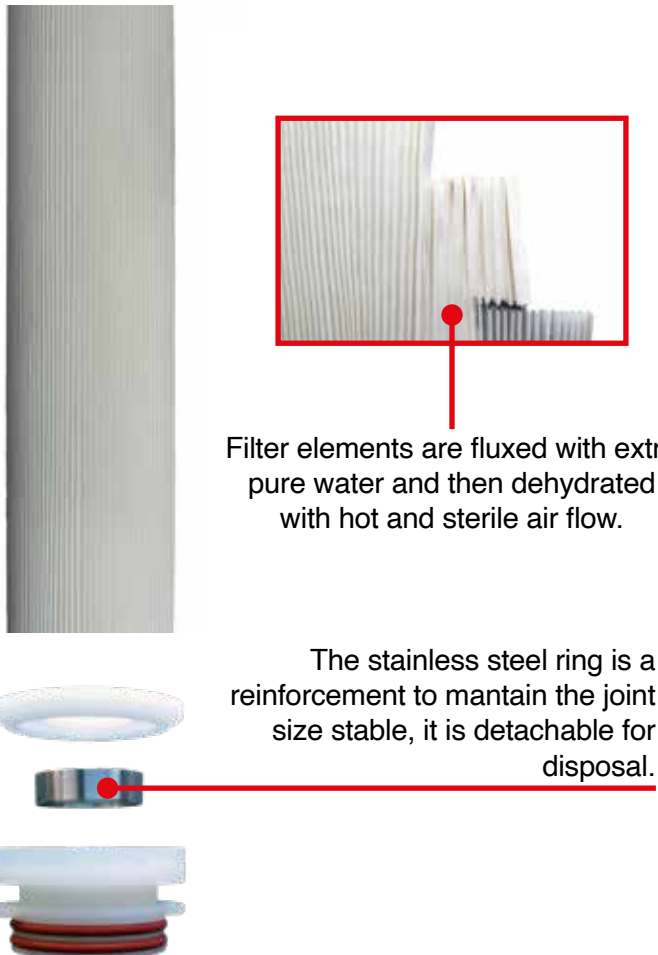
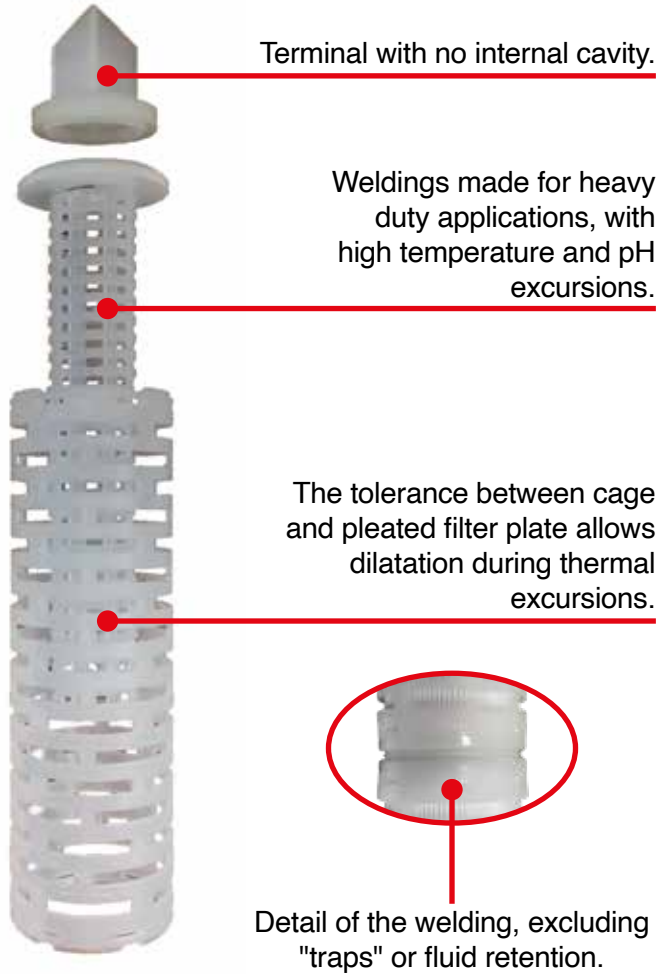
	0,2 μm	0,45 μm	0,65 μm
<i>P. Diminuita</i>	S	R	
<i>L. Oenos</i>	S	S	R
<i>Acetobacter</i>	S	S	R
<i>Brettanomyces</i>	S	S	R
<i>S. Cerevisiae</i>	S	S	S

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 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

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

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

- Thermo-welded polypropylene filter media, with no electric charge
- Porosity 0.6 - 1 - 3 - 5 - 10 - 20 μm , with absolute particle degree β 5000
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

Retention efficiency

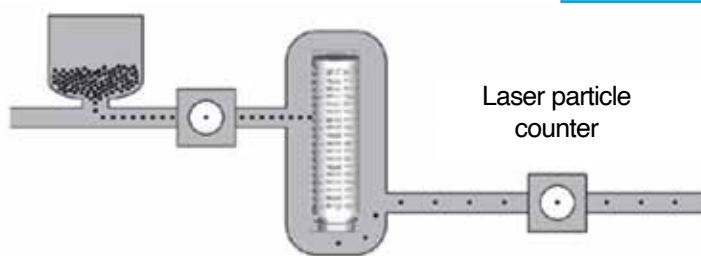
Particle removal efficiency is established with the Beta ratio (β):

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

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

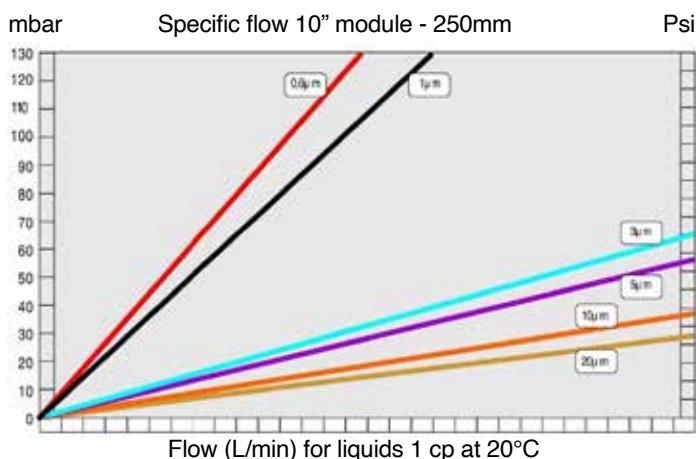
DOWNSTREAM PARTICLES	RATIO	β	EFFICIENCY
50.000	$\frac{100.000}{50.000}$	2	50%
5.000	$\frac{100.000}{5.000}$	20	90%
1.000	$\frac{100.000}{1.000}$	100	95%
100	$\frac{100.000}{100}$	1.000	99,9%
20	$\frac{100.000}{20}$	5.000	99,98%

UPSTREAM PARTICLES = 100.000 units



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 μm
- 1 μm
- 3 μm
- 5 μm
- 10 μm
- 20 μm



Construction materials

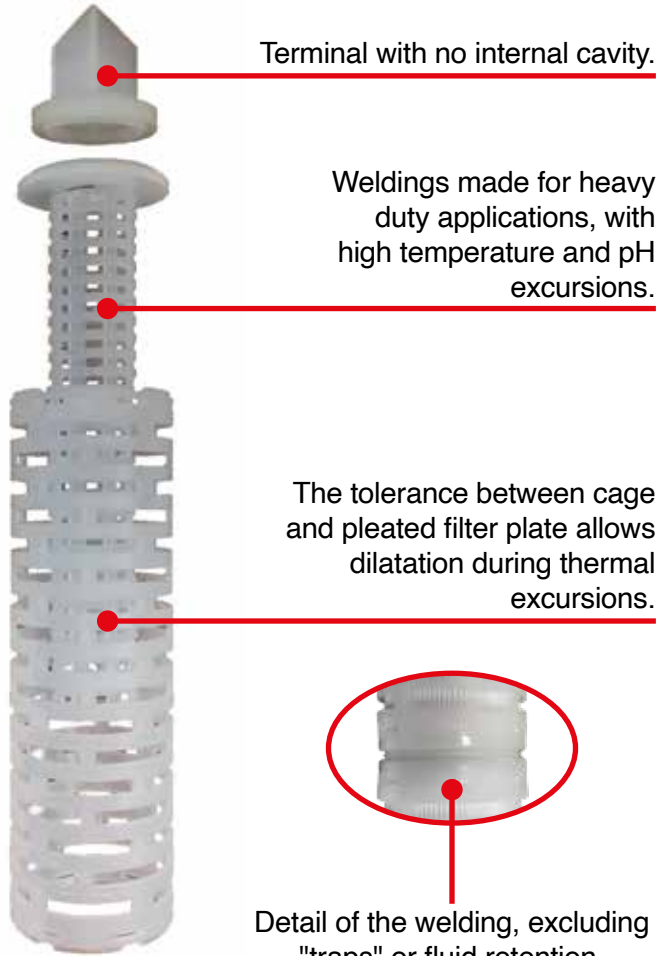
Filter plate	Pleated heat-sealed polypropylene, scalar porosity
Support and drainage layers	Polypropylene microfiber
Internal and external cage	Polypropylene
Terminal supports	Polypropylene
Standard 'O' rings	Silicone
Material coupling	Thermowelding

Operational data

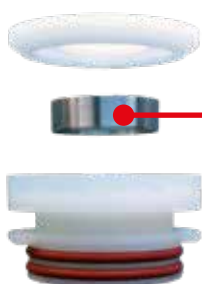
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72,5 Psi)
Max Δp at 121°C with steam	0,3 Bar (4,3 Psi)

Regeneration and hygienization

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.



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.

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 for 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

Operational data

- **Recommended element change ΔP :** 1,5 bar
- **Recommended flow rate:** > 50 m³/h per 40"
- **Max. operating temperature:** 80°C PP/PP
- **Max. ΔP :** 3,4 bar
- **Flow direction:** inside to outside

Applications

- Food & Beverage
- Water processing
- Chemicals, etc.

Part numbering system

DAHFC	40	5	PP	1	1
	Length	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

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

FLUID CLEAN CORE

Depth filter cartridges entirely made of polypropylene

Plus



- **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 for 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 guaranteed "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 a 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.

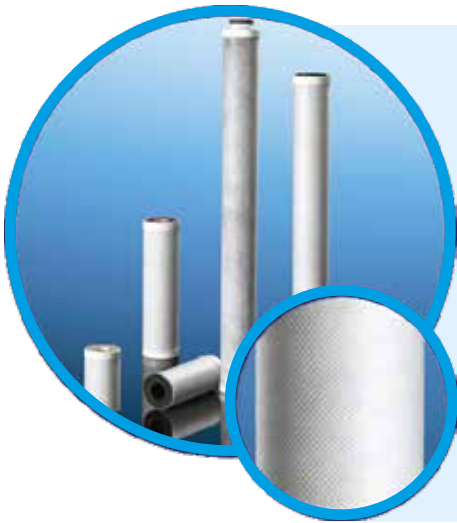
Part numbering system

	0100	30	7	C	S
	Filtration rating	Height	End fitting	Cage	Gaskets/O-rings
Product	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 = Senza fitting D = DOE 2 = 226/flat 3 = baionetta 222/flat 5 = 222/flat 7 = baionetta 226/fin 0 = 222/flat	C = With cage Y = No cage	0 = Buna N E = EPDM S = Silicone V = Viton® x = Option VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.

HOSPICARB CB

Carbon block cartridge

Plus



- **DANMIL HOSPICARB CB** reduces chlorine, organic chemicals related to taste and odour.
- 0.5 - 10 μm 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

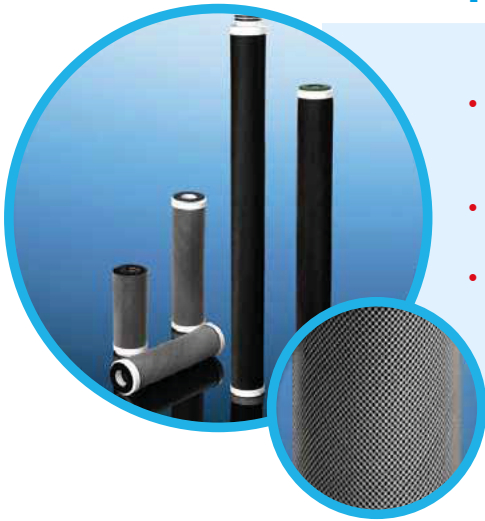
- Water purification systems
- Insustrial effluent water treatment
- Food service
- Product rinse
- Decolorization
- Process water and pre-treatment of RO systems

Part numbering system

DACB	09	M	2	0	1
	Length	Grade	Micron rating	End Cap	Gaskets/O-rings
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	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 = EPDM 2 = Silicone 3 = Viton® x = Option

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Plus



- **DANMIL HOSPICARB FC** is a dual purpose filter of high quality activated carbon impregnated onto a support fiber media.
- Designed and developed for carbon treatments as well as particle removal from 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

Applications

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

Part numbering system

DAFC	09	AL	0	E
	Length	Grade	End Cap	Gaskets/O-rings
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	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 <small>VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.</small>

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 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/cm² Brevundimonas decreased.
- 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

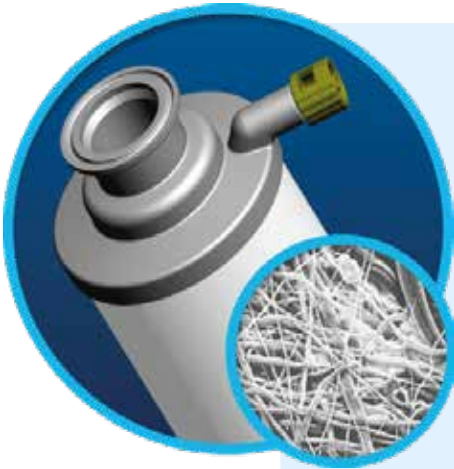
- **Pharmaceuticals:** water pre-filtration, biological fluids, sera, vaccines, ophthalmic water, etc.
- **Food & Beverages:** beer, wine, water, etc.
- **Cosmetics:** fragrances, lotions, creams, shampoos.
- **Semiconductor:** photo resists, RO and DI water, solvent, coatings.
- **Industrial:** solvent,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

Part numbering system

DA25C	H	S	S	006	-
	Size	Connection on inlet	Connection on outlet	Filtration rating	Spec
Product	L = Piccolo H = Metà S = Standard D = Doppio 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 VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.

POLY BIG CAP

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



- **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 according with F.D.A. and U.S.P.
- Materials meet the requirements of the USP class VI.
- Polypropylene filter media and supporting drainage offer superior strength and contaminant capacity. All this is bulid in a full size Polypropylene Big Cap.
- Strenght quality control standards guaratee effective, consistent filtration performance and controlled pore size.
- Traceability: all grades 100% traceable.
- Sterilizable: can be autoclaved or steam sterilized.
- Wide solvent compatability: 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 & Beverages:** beer, wine, water, etc.
- **Cosmetics:** fragrances, lotions, creams, shampoos.
- **Semiconductors:** photo resists, RO and DI water, solvent, coatings.
- **Industrial:** solvent, paints, inks, oils, chemicals.

Part numbering system

DA25C	1	S	S	006	2
	Length	Connection on inlet	Connection on outlet	Filtration rating	O-rings
Product	1=10"	S = 1.5" Sanitary Flange (TC) 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 VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.

SERVICE II

Hydrophobic PTFE membrane

Technical characteristics

- Expanded polytetrafluoroethylene (PTFE) membrane
- Absolute porosity 0.2 μm with microbiological degree in liquid corresponding to 0.01 μm 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:

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

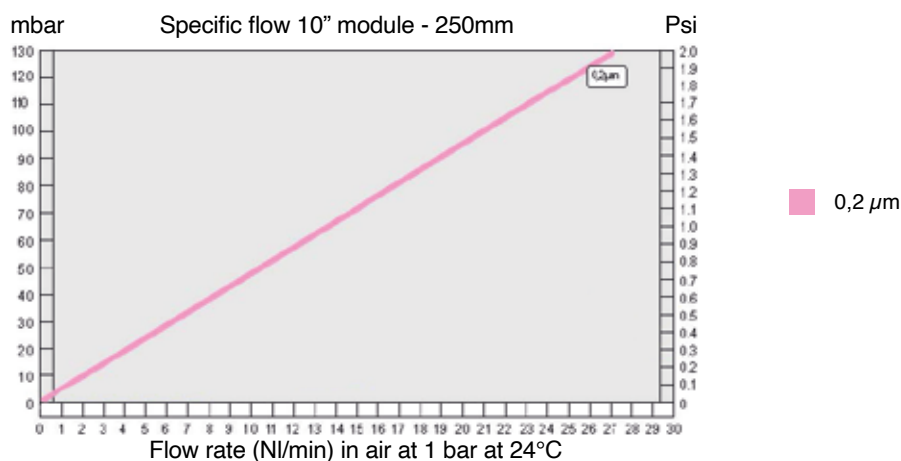
The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

	0,2 μm
<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 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	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	0,65 m ² (6,5ft ²) 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.

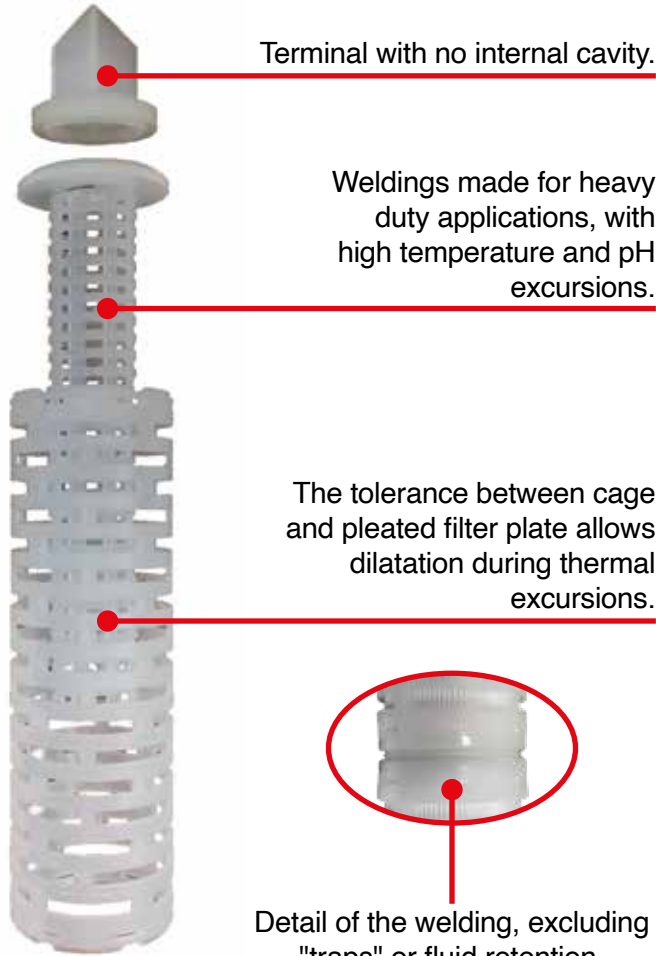
DANMIL technical department can provide compatibility technical details but above all validations for complete work cycles.

Integrity test

		0,2 μm
BUBBLE POINT	bar	1.4
	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.

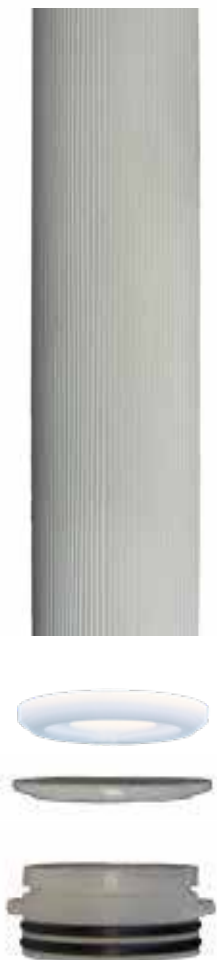


Detail of the welding, excluding "traps" or fluid retention.



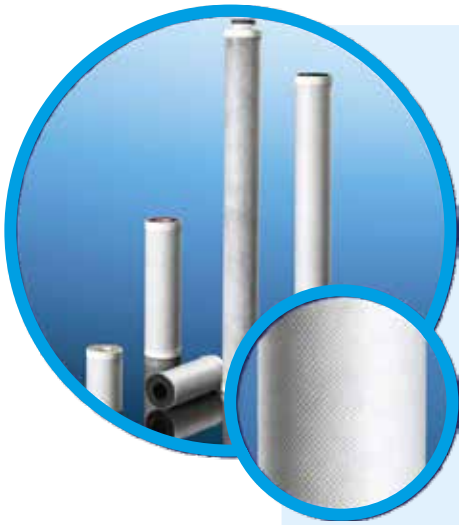
Filter elements are fluxed with extra pure water and then dehydrated with hot and sterile air flow.

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



SPUN ABSOLUTE

Absolute rated depth cartridge



- **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 termally bonded media also eliminates fiber 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.

Benefits

- 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.

*COC: Certificate of Community Approval

Applications

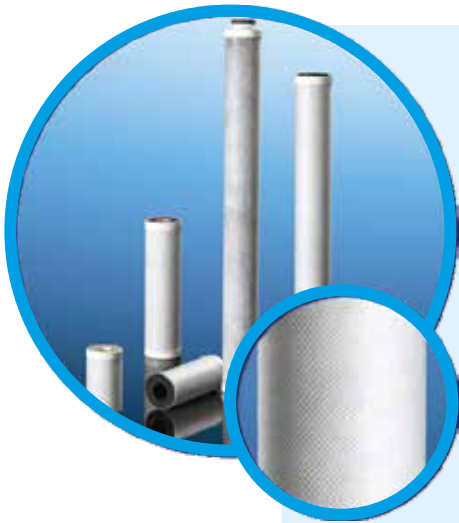
- Food & Beverage
- Pharmaceutical
- Electronics
- Water treatment
- Process water, polishing and final filtration
- Membrane pre-filtration, clarification and chemicals
- Membrane protection.

Part numbering system

DAA	40	P	1	25	3	0	X
	Length	Media	Dia	Micron	End Cap	Gasket/O-rings	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 = Option VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.	X = Standard no outer net

SPUN ABSOLUTE II

Absolute rated depth cartridge



- **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 termally bonded media also eliminates fiber 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.

Benefits

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

*COC: Certificate of Community Approval

Applications

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

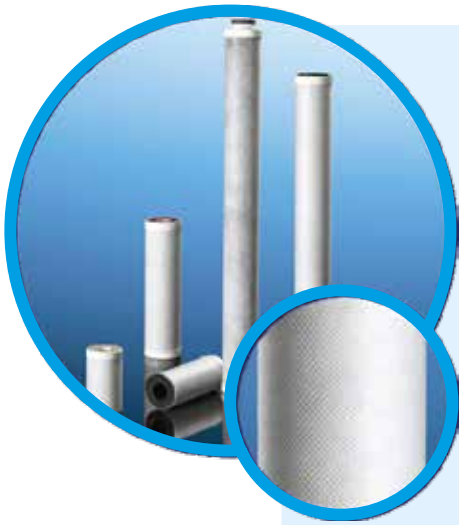
Part numbering system

DAAIL	40	P	1	25	3	0	X
	Lenght	Media	Dia	Micron	End Cap	Gaskets/O-rings	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



- **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 a multi layer of fiber 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.

Benefits

- 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

*COC: Certificate of Community Approval

Applications

- Food & Beverages
- Pharmaceutical
- Chemicals
- Water treatment
- Process water and 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	
	Length	Media	Dia	Micron	End Cap	Gaskets/O-rings	
Product	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 (standard) 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	S P E C I A L C O D E
						VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.	

Pleated microfibers in 100% AISI 316 L construction

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 wire mesh support welded to the end caps.
- Up to 16 bar differential pressure.
- Wide temperature tolerance.
- Regenerable by chemical, 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

Applications

- High temperature process
- High viscose fluids

Part numbering system

DA21	1	0	7	10	005	2	X
	Insert		Cartridge type	Length	Filtration rating	Gasket/O-rings	Gasket Thickness DOE
Product	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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TEX

String wound cartridge **Plus**



- **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 a 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.
- Consist 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, coton, 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 fiber elements are used.

Benefits

- 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

*COC: Certificate of Community Approval

Applications

- Food & Beverage
- Pharmaceutical
- Chemicals
- Water treatment
- Process water and clarificatoin 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
	Length	Micron	Yarn	Core	Dia	End cap	Gasket/O-rings	
Product	04 = 4" 05 = 5" 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	A5 = 0.5 01 = 1 03 = 3 05 = 5 10 = 10 20 = 20 25 = 25 50 = 50 75 = 75 99 = 100	01 = Polyester 02 = Polypropylene 03 = Fibrillated polypropylene 04 = Bleached cotton 06 = Glass fiber 07 = Nylon 08 = Rayon/Viscose 09 = Washed polypropylene	1 = Polyester 2 = Polypropylene 3 = 304 S.Steel 5 = 316 S.Steel 7 = Tinned S.	1 = 62 2 = 50 6 = 100 7 = 66	0 = DOE (standard) 2 = 226/flat 3 = 222/flat 7 = 226/fin 8 = 222/fin	N = Nitrile E = EPDM S = Silicone V = Viton® X = Option Digit only apply if cartridge is with o-ring/gasket VITON® is a registered trademark of E.I. du Pont de Nemours & Co. Inc.	S P E C I A L C O D E



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