

# BorsoPleat-M

VAN BORSELEN FILTERS



Absolute Rated Pleated Glass Fibre Cartridge Filters

A range of absolute rated cartridge filters from Van Borselen Filters, featuring the latest developments in borosilicate glass fibre filter media technology, **BorsoPleat-M** cartridges are constructed from robust glass fibre and polypropylene filtration layers, offering removal ratings from 0.5 to 5 micron absolute.

**BorsoPleat-M** cartridges are suitable for absolute removal of unwanted particulates and for prefiltration to membrane filters.

The **BorsoPleat-M** cartridges incorporate a polypropylene prefiltration layer, combined with a high dirt capacity glass fibre media. This has the effect of longer service life, improved operating costs and smaller process footprint.

The **BorsoPleat-M** are also highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

## Features and Benefits:

### • BorsoPleat-M cartridges

Selection of the latest and most advanced glass fibre media has resulted in a robust filter cartridge with high dirt holding capacity and excellent chemical compatibility.

### • Zeta potential

The BorsoPleat-M cartridges display a natural, positive electrostatic charge when used in aqueous solutions. This results in the enhanced removal of submicronic particles, smaller than the designated micron rating.



### • High filtration area

Large surface area for low clean pressure drop.

### • Guaranteed removal ratings

BorsoPleat-M cartridges are validated using the recognised industry standard modified OSU-F2 single pass test to Beta 5000 (99.98% efficiency).

### • Suitable for steam and hot water sanitisation

BorsoPleat-M cartridges are resistant to repeat steam sterilisation up to 130°C (266°F) and hot water cycles at up to 90°C (194°F).

### • Environmentally friendly

BorsoPleat-M filters are environmentally friendly, all spent cartridges can be readily incinerated to trace ash.

### • Full traceability

All BorsoPleat-M cartridges are identified with a batch serial number. Each BorsoPleat-M cartridge is supplied with a Certificate of Quality and an operating instruction leaflet.

### • Controlled manufacturing environment

BorsoPleat-M cartridges are manufactured in an ISO Cleanroom environment by fully gowned staff, minimising the risk of contamination.





# Specifications

## Materials of Manufacture

Filter media: Glass fibre  
 End fittings: Polypropylene  
 Inner core: Polypropylene  
 Outer support: Polypropylene  
 End fittings: Polypropylene  
 Support ring: Stainless steel

## Cartridge Dimensions

Diameter: 63mm (2.5")  
 Length: 254mm (10")  
           508mm (20")  
           762mm (30")  
           1016mm (40")

## Effective Filtration Area

Up to 0.4m<sup>2</sup> per 10".

## Cartridge Treatment

Standard: Cleaned without further treatment.  
 Flushed: Flushed with pyrogen-free water.  
 Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm.

## Gaskets and O-Rings

Ethylene Propylene, FEP encapsulated, Silicone, Viton®, Nitrile or Polypropylene felt available.

## Maximum Differential Pressure

Normal flow direction at:  
 20°C (68°F): 6.0 bar (87lb/in<sup>2</sup>)  
 80°C (176°F): 4.0 bar (58lb/in<sup>2</sup>)  
 100°C (212°F): 3.0 bar (43lb/in<sup>2</sup>)  
 120°C (248°F): 2.0 bar (29lb/in<sup>2</sup>)

Reverse flow direction at:  
 20°C (68°F): 2.1 bar (30lb/in<sup>2</sup>)  
 80°C (176°F): 1.0 bar (15lb/in<sup>2</sup>)  
 100°C (212°F): 0.5 bar (7lb/in<sup>2</sup>)

## Operating Temperature

Maximum continuous: 80°C (176°F)

## Foodgrade approved

FDA 21 CFR 177.1520  
 FDA 21 CFR 177.2600  
 EC 10/2011

## Sterilisation

In situ steam 80 x 30 minute cycles at 130°C (266°F).  
 Hot water 200 x 20 minute cycles at 85-90°C (185-194°F).

## Extractables

Minimum total extractables. Please refer to the BorsoPleat-M Validation Guide.

## Integrity Testing

BorsoPleat-M filter cartridges are batch tested for integrity using the Bubble Point Test.

## Cartridge Construction

The BorsoPleat-M cartridges are constructed from polypropylene, borosilicate glass fibre and a FDA approved binder..

The inherent structural stability of the BorsoPleat-M, prevents 'channelling' and avoids the risk of particle unloading even under impulse conditions.

The multi-layer combination of filter media, irrigation mesh and drainage material carefully pleated and thermally bonded maximises the media area and ensures an efficient flow throughout the cartridge.

The BorsoPleat-M fusion bonded construction ensures cartridge integrity. No surfactants or bonding agents are used, minimising extractables.



# Applications

**BorsoPleat-M** cartridges provide absolute filtration where reproducibility and consistency of performance are critical.

Suitable for the filtration of aqueous and organic liquids, **BorsoPleat-M** cartridges can be used as prefilters or final filters in the following applications:

- **Foods and Beverages**

The clarification of beers, wines and spirits to a clear and bright finish without affecting taste. It is an ideal prefilter to protect membranes used for cold sterilisation.

- **Process water system**

The filtration of process water installations for removal of general contamination and resin fines. The naturally occurring zeta-potential of glass fibre in aqueous solutions makes the **BorsoPleat-M** filter ideal for removing submicronic particles.

- **Parmaceuticals and Bioprocessing**

The excellent dirt holding capacity of the **BorsoPleat-M** makes it an ideal choice for prefiltration of complex biological fluids (e.g. cell culture media).

- **Fine chemicals**

The filtration of high grade chemicals including solvent reagents, photographic emulsions, inks and paints.

- **Cosmetics**

The clarification of process water and intermediates for the finished product.





# Additional Information

## Range

Van Borselen Filters Supplies a full range of filtration products: e.g.:  
Filtercartridges (Meltblown/ Membranes/ Activated Carbon)  
Filter housings, Filterbags, Lenticular Module Filters, Self Cleaning  
Filters, Filter Sheets, Sieving Machines, Porous Sintered Metal,  
Oil skimmers, Strainers and many more..

## Material Conformity and Validation

The bio-safety of all materials used in the manufacture of **BorsoPleat-M** cartridges is assured by FDA approval to Title 21CFR.177. and EC 10/2011

## Chemical Compatibility

The **BorsoPleat-M** materials of construction are compatible with a wide range of chemicals and solvents, however care must be taken to select the appropriate seal material. Advice on chemical compatibility is available. Since operating conditions vary considerably between applications, verification by the end user is recommended.

## Quality control

Our factories are all located in Western Europe and are accredited to ISO 9001-2008.

All our filters are fully traceable and manufactured under clean room conditions.

## Engineering capacities

One of our strengths is developing filter vessels for critical applications in the chemical industry.

We have a wide experience in supplying filter vessels, like Duplex (UNS S31803), Super-Duplex (UNS S32750/60), Titanium, RvS316L, CS (optionally with a coating or lining).

Our filter vessels comply with the necessary design codes (ASME VIII, EN13445, U-stamp and PD5500) and comply to ATEX and PED 97/23/EC standards. Both liquids and gasses PED classes I, II, III, IV, all modules



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