

Sinterflo® P

Cylindrical Sintered Metal Powder Filter Elements

Porvair Filtration Group manufacture a range of industry standard stainless steel filter elements suitable for use in a wide range of industries, including petrochemical and pharmaceutical.

The robustness of design, that is provided by a fully welded metallic element or cartridge, is required to resist deterioration in harsh operating environments where the fluids present are aggressive, high temperatures are experienced or where the operating differential pressures are high.

For some filtration applications, the use of a conventional disposable polymeric cartridge may simply be environmentally unacceptable and the use of a re-cleanable element will often give more cost effective filtration.

These filter elements are offered in the following media configurations:

- Sinterflo® F Sintered Metal Fibre
- Sinterflo® P Sintered Metal Powder
- Sinterflo® M Metal Mesh
- Sinterflo® MC Sintered Metal Composite

Sinterflo® P is a robust material manufactured from sinter-bonded metal powders. Primarily produced in 316L grade for use in temperatures up to 540°C (1004°F), depending on process conditions, and offering resistance to most chemicals, Sinterflo® P media can also be produced in other grades of stainless steel and alloys such as Inconel®, Hastelloy® and Monel®.

Sinterflo® P powder media can be manufactured in both disc format or in cylinder format. For cylinders, our isostatic pressing ensures greater media uniformity with no welds, leading to increased corrosion resistance.



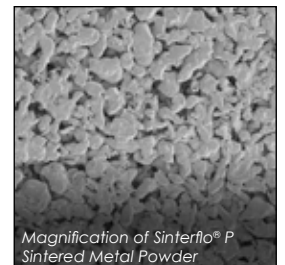
Applications

Typical applications for our Sinterflo® P elements include the following:

- **Catalyst recovery and retention**
For use in the collection of catalyst dust on various types of catalyst hoppers or FCC regenerator stream in refineries.
- **Polymer melt**
For applications in the manufacture of polypropylene film.
- **Chemical production**
For applications in the clean-up of hydrogen process gas, and in the manufacture of magnesium nitrate and caustic solutions.
- **Steam**
For applications in the chemical, food, beverage and pharmaceutical industries.
- **Liquids and liquid backwash**
For applications in catalyst steam backwash applications and in the manufacture of polyols.



Cross section of Sinterflo® P Sintered Metal Powder



Magnification of Sinterflo® P Sintered Metal Powder

Features and Benefits

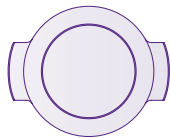
- Sinterflo® P elements**
 Sinterflo® P is a robust filter material manufactured from sinter-bonded metal powders.
- Extremely robust**
 The thickness of our cylinders ensures a reliable high strength filter for longer on-stream life and effective depth filtration.
- Smooth surface finish**
 The manufacturing process of our elements enables us to achieve a smooth surface finish. This is preferable for backwash applications.
- Self supporting construction**
 The self supporting construction eliminates the need for additional hardware.
- Isostatic pressed, robust construction**
 The isostatic manufacturing process of our elements eliminates the need for seam welding and offers the option of sinter-bonding the adapters, ensuring the highest integrity filters elements.
- Broad range of fixed, uniform pore sizes**
 A wide range of micron ratings are available for normal and high pressure applications. Our isostatic manufacturing process ensures greater media uniformity.
- Ability to withstand varying process conditions**
 Excellent durability in challenging environments, such as compression, vibration and changing process conditions.
- Other alloys available**
 Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, 904L stainless steel, 310 stainless steel, Inconel®, Hastelloy® and Monel® on request, as well as sintered powdered bronze.

Element Construction

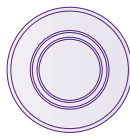
The Sinterflo® range of filter cartridges and elements are constructed in stainless steel 316L as standard. These filters are available in a cylindrical element configuration, giving 0.05m² (0.55ft²) of active filtration area per 10" length.

Our range of Sinterflo® P elements are manufactured by isostatically pressing the powder media under high pressure within a tubular mould. This ensures greater media uniformity with no welds, leading to increased corrosion resistance.

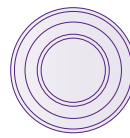
The method of construction and materials used allow for operation from -269°C (-452°F) to 1000°C (1832°F) and up to 25bar (363psi) differential pressure in normal flow direction. Higher operating temperatures and differential pressures can be accommodated by design.



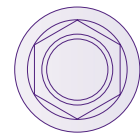
226 End Fitting



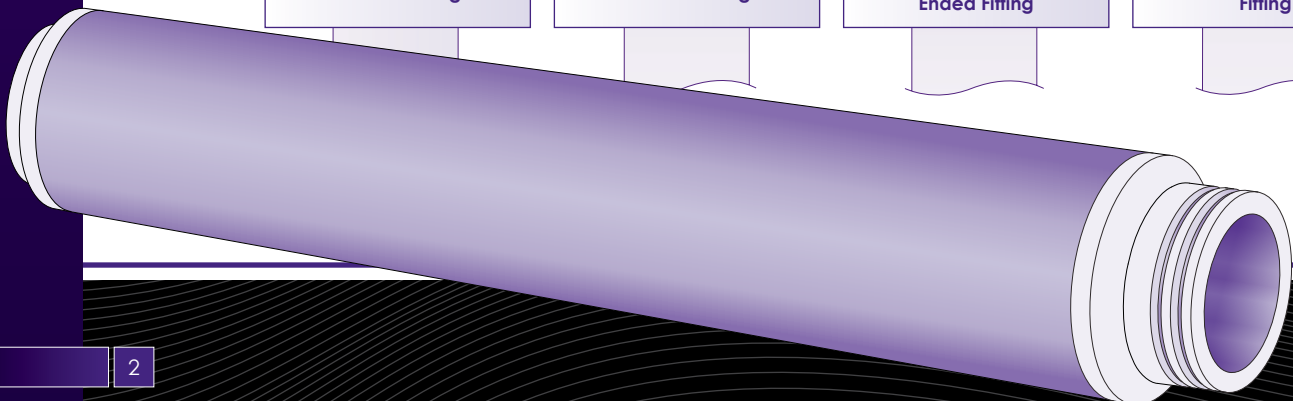
222 End Fitting



Double Open Ended Fitting



Threaded End Fitting



Specifications

Materials of Manufacture

316L stainless steel standard. 304L stainless steel, Inconel®, Hastelloy®, Monel® on request or by process selection. Additional alloys are available on request.

Element Dimensions*

Diameter: 66mm (2.6") as standard.
 Lengths: 125mm (5"), 250mm (10"), 498mm (20"), 745mm (30") and 1012mm (40").

* Other diameters and lengths available on request.

Effective Filtration Area

0.05m² (0.55ft²) per 250mm (10") element.

Gaskets and O-Rings*

EPDM as standard. Nitrile, PTFE, Silicone, Viton® and PTFE coated Viton® available on request or by process selection.

* FDA approved seals are available.

Typical Maximum Differential Pressure* (all lengths)

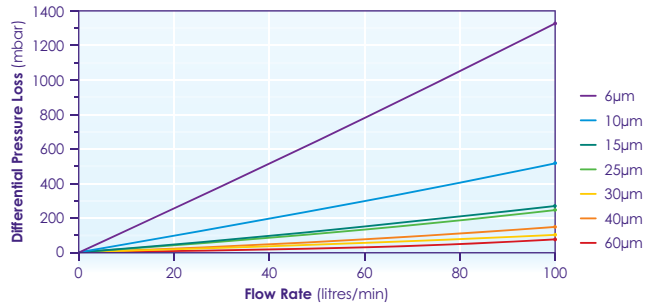
Normal flow direction: 25bar (363psi)
 Reverse flow direction: 10bar (145psi)

* Grade dependant.

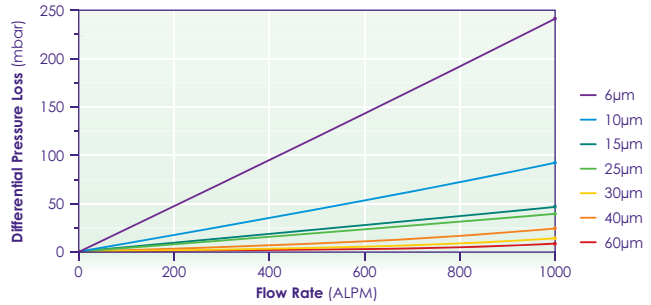
Operating Temperature

Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting,
 From -269°C (-452°F) to 1000°C (1832°F) alloy limiting.

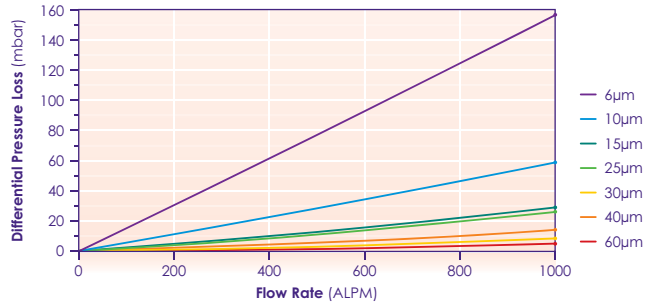
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



* Using a 10 inch cartridge, at ambient temperature.

Sinterflo® P Stainless Steel Media Grades

Stainless Steel Grades	Micron Rating (µm) (micron code)	Liquids (µm)* (99.9% efficiency)	Gases (µm) (99.99% efficiency)
S10	6 (0006)	6	0.7
S20	10 (0010)	10	0.8
S30	15 (0015)	15	4
S36	25 (0025)	25	5
S40	30 (0030)	30	6
S41	40 (0040)	40	8
S50	60 (0060)	60	15

* Single Pass Efficiency Test in accordance with ASTM795 ACFTD.

Additional Information

Range

Suitable for use in **Porvair** filter housings and as direct replacements for existing elements, Sinterflo® P elements can be supplied with end fittings to suit most hardware installations without modification. They are available in single or multiple module units in lengths of 10, 20, 30 and 40 inches, and a standard outside diameter of 2.6 inches (66mm). Each element is supplied with all necessary seals or O-rings to ensure chemical compatibility.

Quality Assurance

Quality is at the heart of every stage of our operation and a fundamental part of our culture. We are ISO9001 approved at all of our manufacturing facilities and hold many other accreditations for the various industries we serve.

Product Innovation, Manufacturing and Testing

We understand that product development involves building multidiscipline teams, not only within the company, but often in partnership with our customers, improving project efficiency and ensuring complete customer satisfaction. This continuous development of products and materials is vital, to enable us to offer new and better solutions to applications. **Porvair** has implemented various methodologies to drive out waste and process variance across the company to achieve the ultimate goal of zero defects.

We have a dedicated team of scientists, engineers, production and quality professionals working towards the best possible filtration solutions for our customers. We have a fully equipped test house and laboratory, and our experienced design engineers use the latest AutoCAD® technology, with 3D solid modelling, integrated with a finite element analysis system to give full structural assurance capability.

Filter Housings

Please contact a **Porvair Filtration Group** representative for further information on our range of filter housings.

porvair
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