Hot Gas Filtration

Weave Impossible to Possible

BOEDON Industech Limited

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BOEDON Brochure

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FILTER ELEMENTS CATALOGUE

HOT GAS FILTRATION

04.

Recently, iron and steel, energy, non-ferrous metallurgy industries grow rapidly, a large number of hot gases containing dust particles is generated during the production, if discharged into the air directly, it is bound to pollute the environment. Therefore, hot gas filtration is essential to the environment protection.

Currently, organic fiber dust collector bags prevail on the market. This kind of dust filter bag is lightweight and low price. However, it has poor resistant to high temperature and easily damaged. When cake is forming on the bag, it will cause clogging and not easy to clean.

There are also ceramic fiber, glass fiber and other inorganic fiber filter bags on the market. Ceramic fiber has good resistant to high temperature and corrosion, but poor ductility and easy to rupture when the temperature rises suddenly. Glass fiber has high strength, but poor folding resistance and wear resistance.

How Boedon Solve?

Boedon offers 3 types of metal hot gas filters. These filters can not only effectively overcome the disadvantages of poor high temperature resistance and easily damaged exists in organic fiber filter bags, but also overcome the disadvantages of ceramic fiber and glass fiber. The metal filters can withstand the harsh filtration environment such as high temperature or acid and alkali corrosive gases, and have obvious advantages over other non-metallic materials.

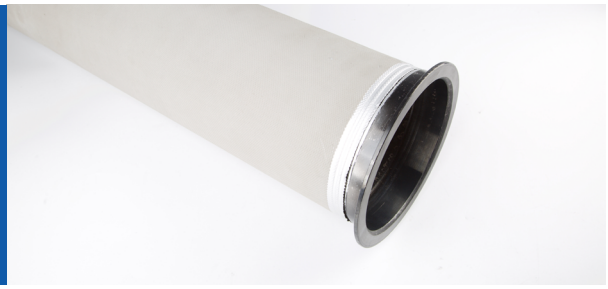
What Boedon Supply?

Sintered Felt Filter Bag

- Maximum operating temperature 1000 °C
- Good porosity
- High dirt holding capacity
- Pleats offer enhanced filter area
- Chemical, ceramic, waste incineration, thermal power generation, etc.

Strengthened Hot Gas Cleaning Filter

- Maximum operating temperature 650 °C
- High strength, stable structure
- High filtration accuracy
- Good thermal shock resistance
- Energy & chemical, nonferrous metallurgy, new coal chemical, etc.



Standard Hot Gas Cleaning Filter

- Maximum operating temperature 450 °C
- Great dust removal capacity
- Good electrical conductivity
- Great abrasion resistance
- Cement, iron & steel, boiler, glass, metallurgy, etc.

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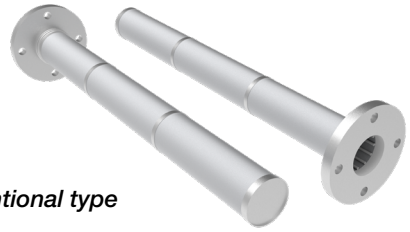
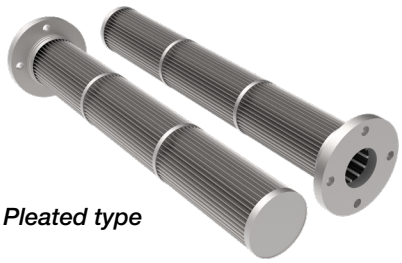
Sintered felt

We supply both conventional type and pleated type **sintered felt filter bags** to meet your demands on **high temperature hot gas dust removal.**

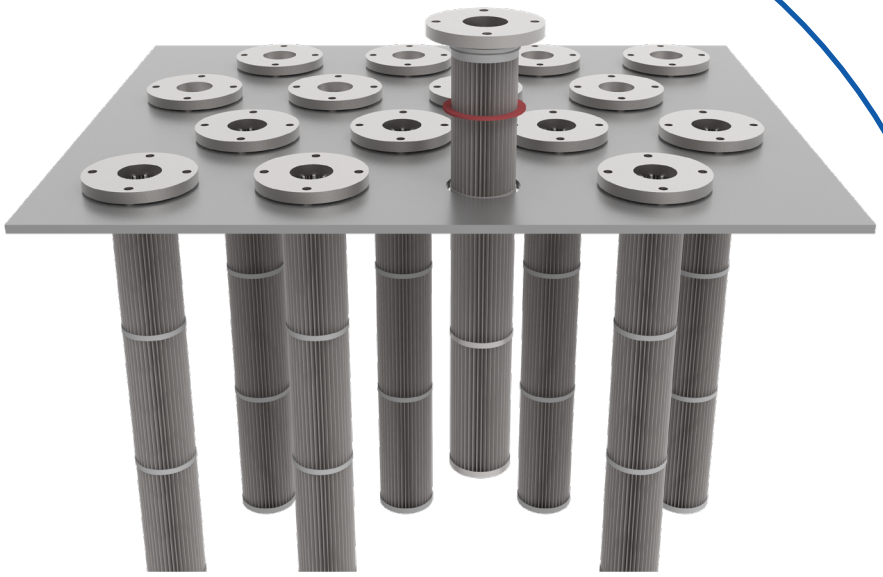
Sintered felt filter bag is a porous filter bag for depth filtration. It is made of bundle metal fibers by sintering in high temperature and welding after special non-woven laying and stacking with the pore gradient formed by layers of different pore sizes. Our filter media are composed of a metal cage skeleton, coarse metal fiber layer and fine metal fiber layer. It is widely used in various industries involving high temperature flue gas dust removal due to its excellent resistant to high temperature and corrosion.



Conventional type



Pleated type



SINTERED FELT FILTER BAG

Specification

Material: stainless steel (304, 316L, 310S, 314, etc.), FeCr Al

Working temperature: Max. 1000 °C.

Porosity: 75% – 88%

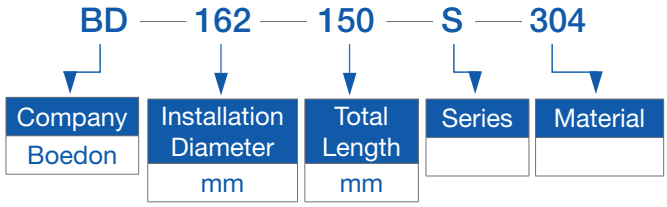
Connection: flange

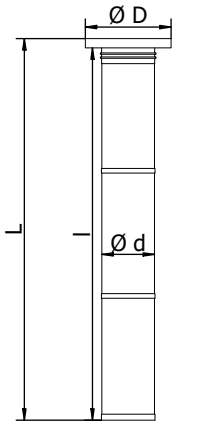
Initial resistance: 30–100 Pa

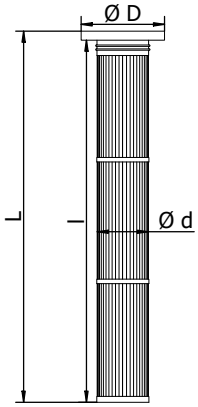
Emission concentration: < 5 mg/Nm^3

Cleaning method:

regular cleaning or online pulse cleaning







Popular Specification of Sintered Felt Filter Bags

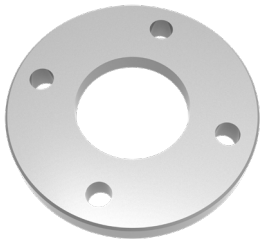
Model	Installation Diameter (mm)	Total Length L (mm)	Length l (mm)	Diameter D (mm)	Diameter d (mm)	Filter Area (m^2)
BD-162-150-S	162	1500	1466	177	143	0.76
BD-162-150-F	162	1500	1466	177	143	2.03
BD-162-75-S	162	750	716	177	143	0.38
BD-162-75-F	162	750	716	177	143	1
BD-162-50-S	162	500	466	177	143	0.25
BD-162-50-F	162	500	466	177	143	0.66
BD-133-150-S	133	1500	1466	153	118	0.62
BD-133-150-F	133	1500	1466	153	118	1.62
BD-133-75-S	133	750	716	153	118	0.31
BD-133-75-F	133	750	716	153	118	0.8
BD-133-50-S	133	500	466	153	118	0.21
BD-133-50-F	133	500	466	153	118	0.53
BD-125-150-S	125	1500	1466	142	108	0.59
BD-125-150-F	125	1500	1466	142	108	1.49
BD-125-75-S	125	750	716	142	108	0.29
BD-125-75-F	125	750	716	142	108	0.73
BD-125-50-S	125	500	466	142	108	0.2
BD-125-50-F	125	500	466	142	108	0.48

Notes:

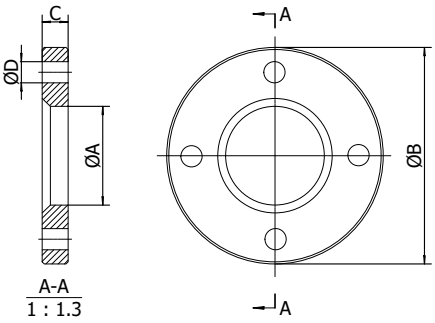
- Installation diameter refers to the diameter for filter installed on the installation plate.
- Other specifications are available upon request.

SINTERED FELT FILTER BAG

Connection



Flange plate



Flange structure plan

Filters are generally provided with a flange for connection to enhance its high temperature and high pressure resistance.

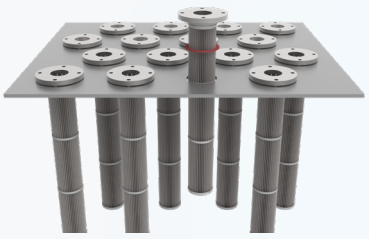
- ϕA (flange ID): 108 mm, 118 mm, 143 mm.
- ϕB (flange OD): 142 mm, 153 mm, 177 mm.
- C (flange thickness): 34 mm
- ϕD (flange hole diameter): 15 mm, 19 mm
- Number of holes: 4
- Special sizes are available upon request.

SINTERED FELT FILTER BAG

Seal Fittings

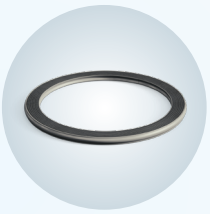
Seal Gasket

The filter is sealed by tightly compressing the seal gasket onto the back of the flange to the upper surface of the installation plate. The roughness of the upper surface of the installation plate and the fitting surface of the flange shall be well designed to perfectly match with the chosen seal gasket as it directly determines whether the seal is reliable and leek-free.



Flange & seal gasket installation

Metal seal gasket



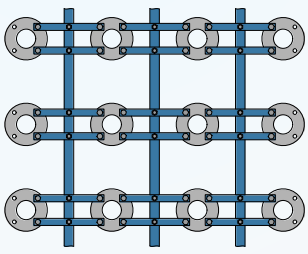
Semi-metallic seal gasket

Asbestos rubber seal gasket

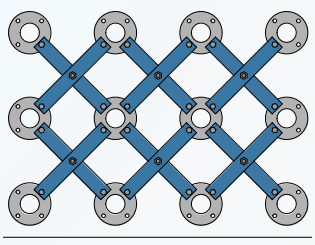
PTFE seal gasket

Hold Down Bar

Hold down bars are the seal fittings between flange holes and the installation plate for fixing. Both parallel and cross hold down bars are available for your option.



Parallel hold down bars



Cross hold-down bars

SINTERED FELT FILTER BAG

Application

Metallurgy

• Submerged arc furnace gas dust removal in iron alloy, ferronickel, silicomagnganese industries

Power Plant

• Thermal power plant coal fired boiler dust removal

Cement

• Rotary kiln fuel gas dust removal, etc.

Ceramic

• Aluminum oxide, high titanium slag dust removal

Chemical

• Gas purification and filtration
• Calcium carbide furnace gas dust removal

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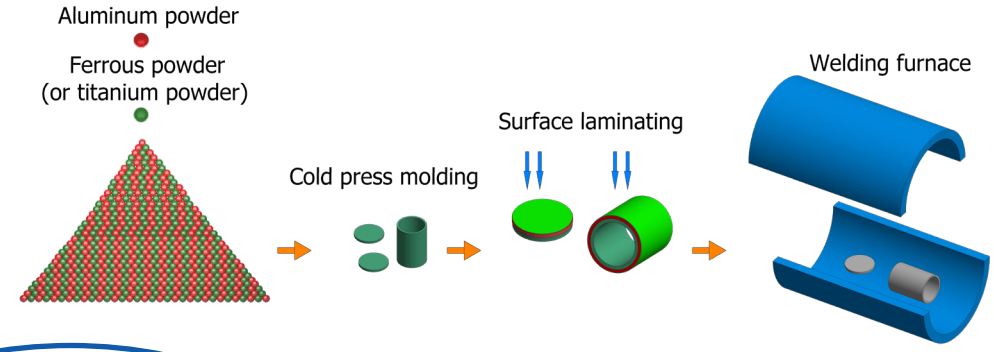
Strengthened Hot Gas Cleaning Filter

We offer **strengthened hot gas cleaning filter** with good thermal shock resistance to meet your demands on **hot gas dust removal.**

Strengthened hot gas cleaning filter features large flux, low resistance and fast filtration speed. It can reduce the chemical reaction of organic molecules, reduce the clogging and make the back flush or pulse dust removal much easier. It uses a cage skeleton as a supporting structure to increase its strength. The flange connection design ensures the sealing effect and prevents the leakage.

Filter Media Production Flow

Generally, FeAl or TiAl is made into metal powder blanks by molding or cold isostaic forming. And then the surface is coated and vacuum sintered.



STRENGTHENED HOT GAS CLEANING FILTER

Specification

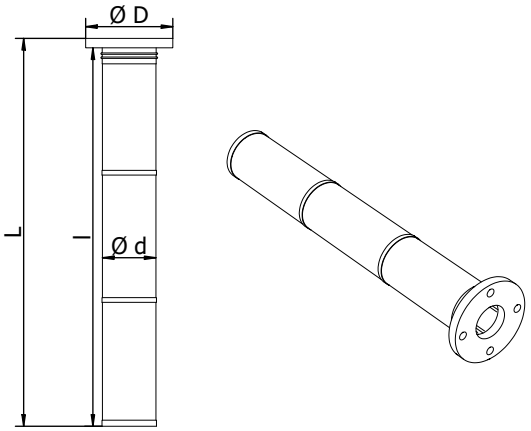
Working temperature: 450 °C – 650 °C

Wall thickness: 1 mm – 2 mm

Dust content after filtration: ≤ 5 mg/Nm^3

Retained dust particle size: ≤ 0.1 μm

Air permeability: 100 m^3/(m^2·h)



BD — T — 60 — 150

Company	Filter Type	Installation Diameter	Total Length
Boedon	Strengthened Hot Gas Cleaning Filter	mm	mm

Popular Specifications of Strengthened Hot Gas Cleaning Filters

Model	Installation Diameter (mm)	Diameter D (mm)	Diameter d (mm)	Total Length L (mm)	Length l (mm)	Filter Area (m^2)
BD-T-60-150	60	90	56	1500	1466	0.28
BD-T-60-175	60	90	56	1750	1716	0.33
BD-T-60-200	60	90	56	2000	1966	0.38
BD-T-60-225	60	90	56	2250	2216	0.42
BD-T-60-250	60	90	56	2500	2466	0.47
BD-T-60-300	60	90	56	3000	2966	0.57

Notes:

- Installation diameter refers to the diameter for filter installed on the installation plate.
- Other specifications are available upon request.

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STRENGTHENED HOT GAS CLEANING FILTERS

Features & Application

Features

- Withstand high temperature ranging from 450 °C to 650 °C.
- High filtration efficiency
- High strength, stable structure
- Make the online dust cleaning easier.
- Excellent resistant to corrosive gases
- Good thermal shock resistance

Application

Metallurgy

- Non-ferrous smelting arsenic removal, dust removal and purification, etc.
- High-precision gas-solid separation of high-temperature gases

Chemical

- Sulfuric acid combustion furnace dust removal
- Combustion finery dust removal and purification, etc.

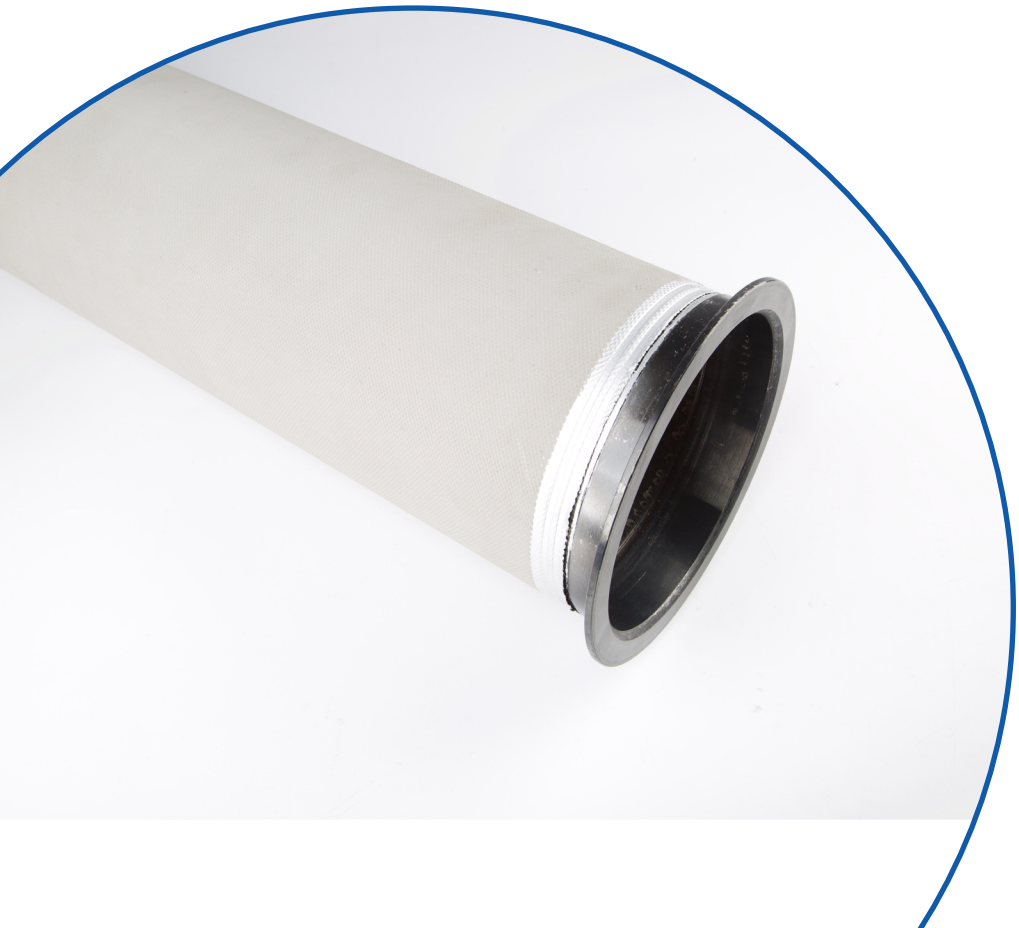
Oil & Gas

- Flue gas generated during oil extraction
- Flue gas dust removal in other energy industries

Standard Hot Gas Cleaning Filter

We can offer **sintered porous candle filter** with good air permeability and stable separation effect to meet your **chemical filtration** demands.

Standard hot gas cleaning filter is a kind of filter bag made of metal powder by sintering into flexible metal powder sintered filter sheet, then cut into suitable size to fit for the cage bone, and welded to the cage bone. Its filtration efficiency is 2 times of the bag filter under the same working conditions and resistance. A metal ring is welded at the opening of the flexible metal membrane for installation and positioning. Hexagonal metal gasket is used for the sealing of the metal ring and the installation plate to prevent the leakage of dust removal gas.



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STANDARD HOT GAS CLEANING FILTER

Specification

Working temperature: ≤ 450 °C

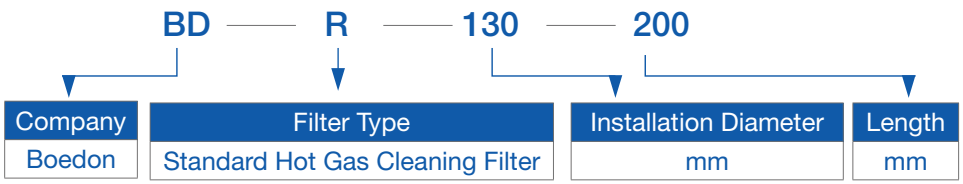
Wall thickness: 0.5–1 mm

Porosity: 30% – 70%

Dust content after filtration: ≤ 5 mg/Nm^3

Retained dust particle size: ≤ 0.1 μm

Air permeability: 100 m^3/(m^2·h)



Popular Specification of Standard Hot Gas Cleaning Filters

Model	Installation Diameter (mm)	Diameter d (mm)	Length l (mm)	Filter Area (m^2)
BD-R-130-200	130	128	2000	0.82
BD-R-130-250	130	128	2500	1.02
BD-R-130-450	130	128	4500	1.84
BD-R-160-200	160	158	2000	1
BD-R-160-250	160	158	2500	1.26
BD-R-160-450	160	158	4500	2.26

Notes:

- Installation diameter refers to the diameter for filter installed on the installation plate.
- Other specifications are available upon request.

STANDARD HOT GAS CLEANING FILTER

Features & Application

Features

- Maximum operating 450 °C
- 2 times of dust removal capacity compared with bag filters.
- Corrosion resistance, can withstand corrosive gases.
- Metal structure offers great abrasion resistance.
- Good electrical conductivity
- Good performance and easy machining performance

Application

Power Plant

- Coal-fired boiler flue gas purification and dust removal

Cement

- Cement industry fuel gas purification and dust removal

Iron & Steel

- Sintering machine produced flue gas dust removal
- High-precision gas-solid separation of high-temperature gases

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