



# Coalescer Filter Element

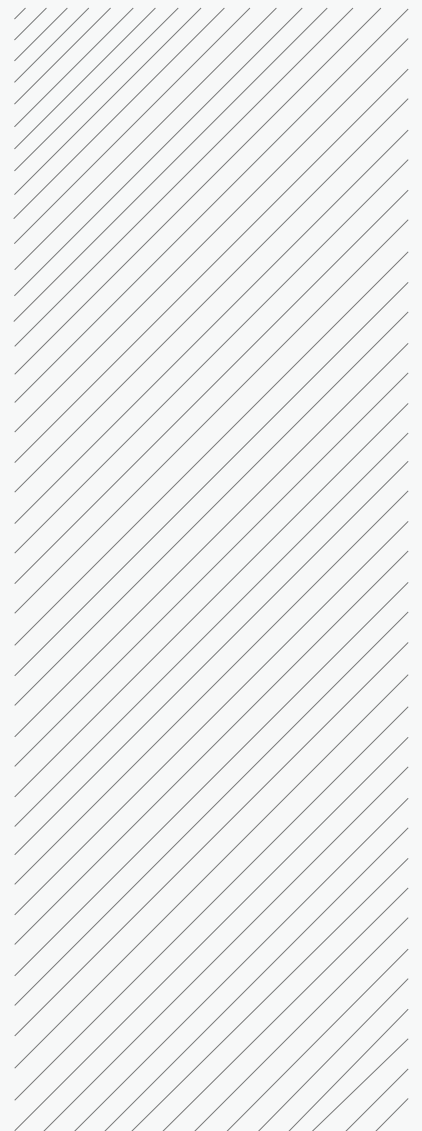
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**BOEDON** Industech Limited

[www.boedon.com](http://www.boedon.com) | [sales@boedon.com](mailto:sales@boedon.com)

# BOEDON Brochure



**The hydrophilic property of coalescer filter element allows it to coalesce small droplet into larger drops in liquid-liquid separation applications in chemical industry.**

Coalescer filter element is constructed of multiple composite materials after special processing. It has good hydrophilic property and is mainly used in gas-liquid separation and liquid-liquid separation applications in the chemical industry. It not only removes solid particles from gases, but also separates trace liquid droplets (water droplets or oil droplets) from the gas through demulsification, and coalesces these small droplets into larger droplets for further medium purification.

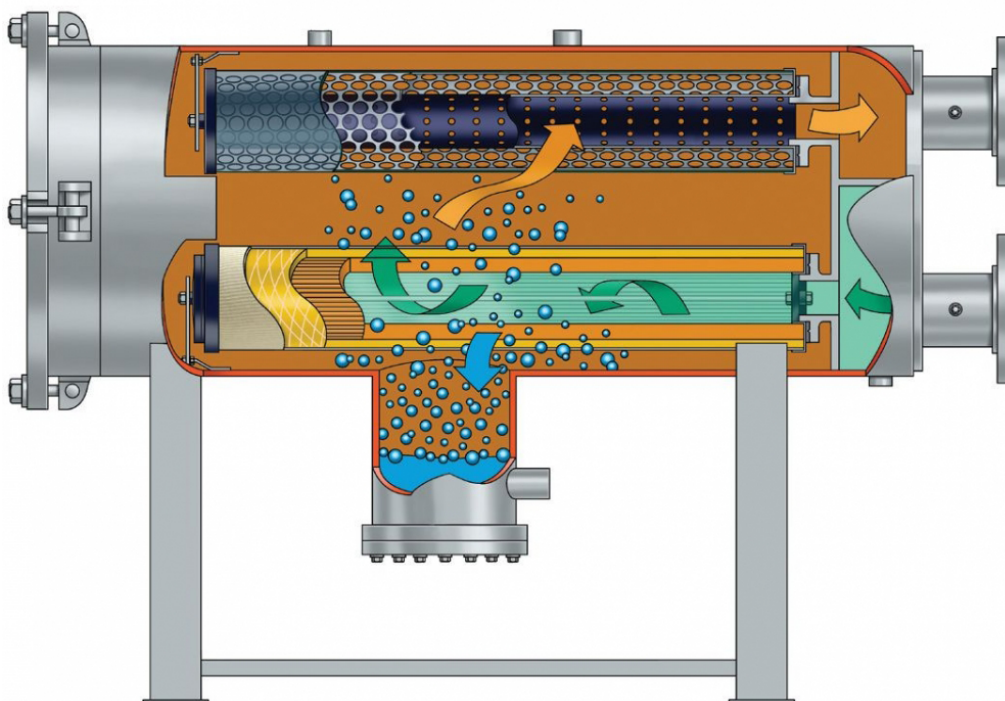
## Coalescer Filter Element



## COALESCER FILTER ELEMENT

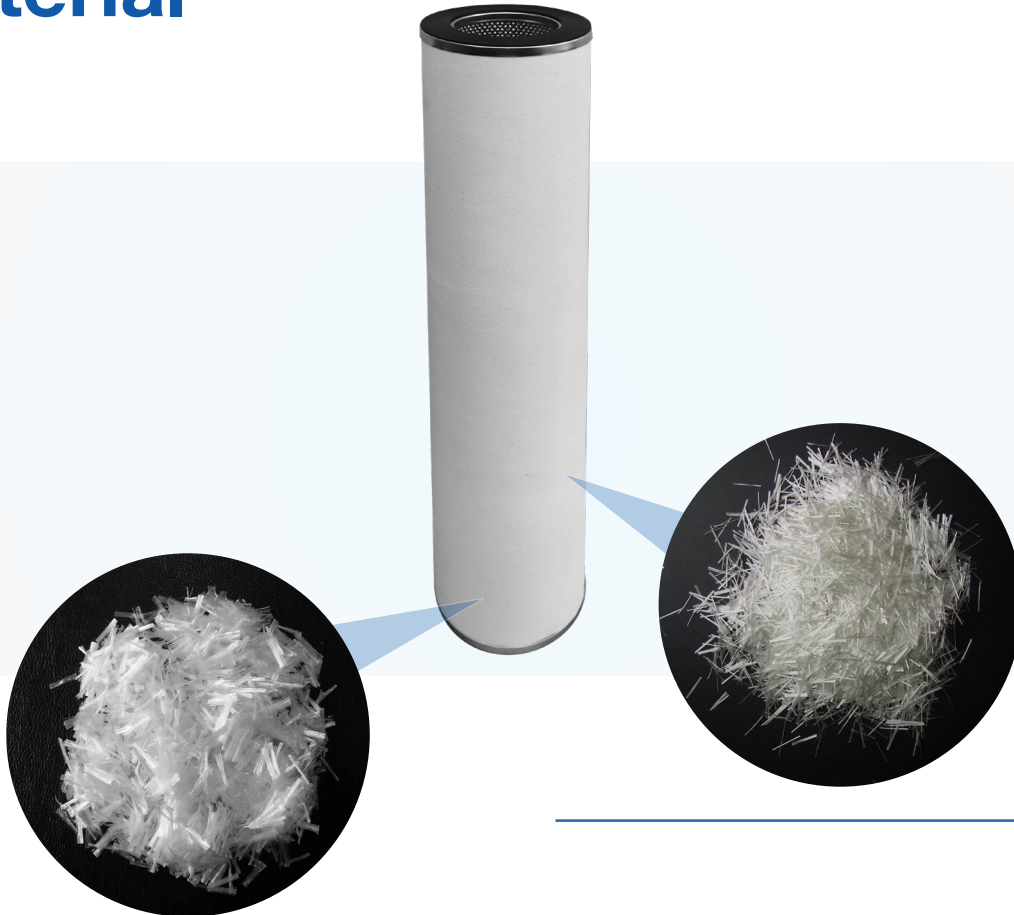
# Working Principle

The medium enters the coalescer filter shell and is distributed to each coalescing filter element by the coalescing filter tray. The liquid flows from inside to outside of the coalescer filter element. Firstly, the liquid passes through the filter layer and filters out solid impurities, and then flows through the demulsification layer and separates the emulsified water from oil. Finally, small droplets coalesce on the coalescence layer and forms larger droplets. The larger droplets settle to the bottom of the shell due to gravity. The whole filtration process of the coalescer filter element is finished.



COALESCER FILTER ELEMENT

# Material



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### **Polyester Fiber Coalescer Filter Element**

It is usually made of synthetic polyester fiber that has good compatibility with various fluids. The filter cartridge is spirally rolled in a multi-layer structure, with each layer using fibers of different properties. The desired filter rating is achieved by controlling parameters such as the shape, size, thickness and density of each fiber layer.

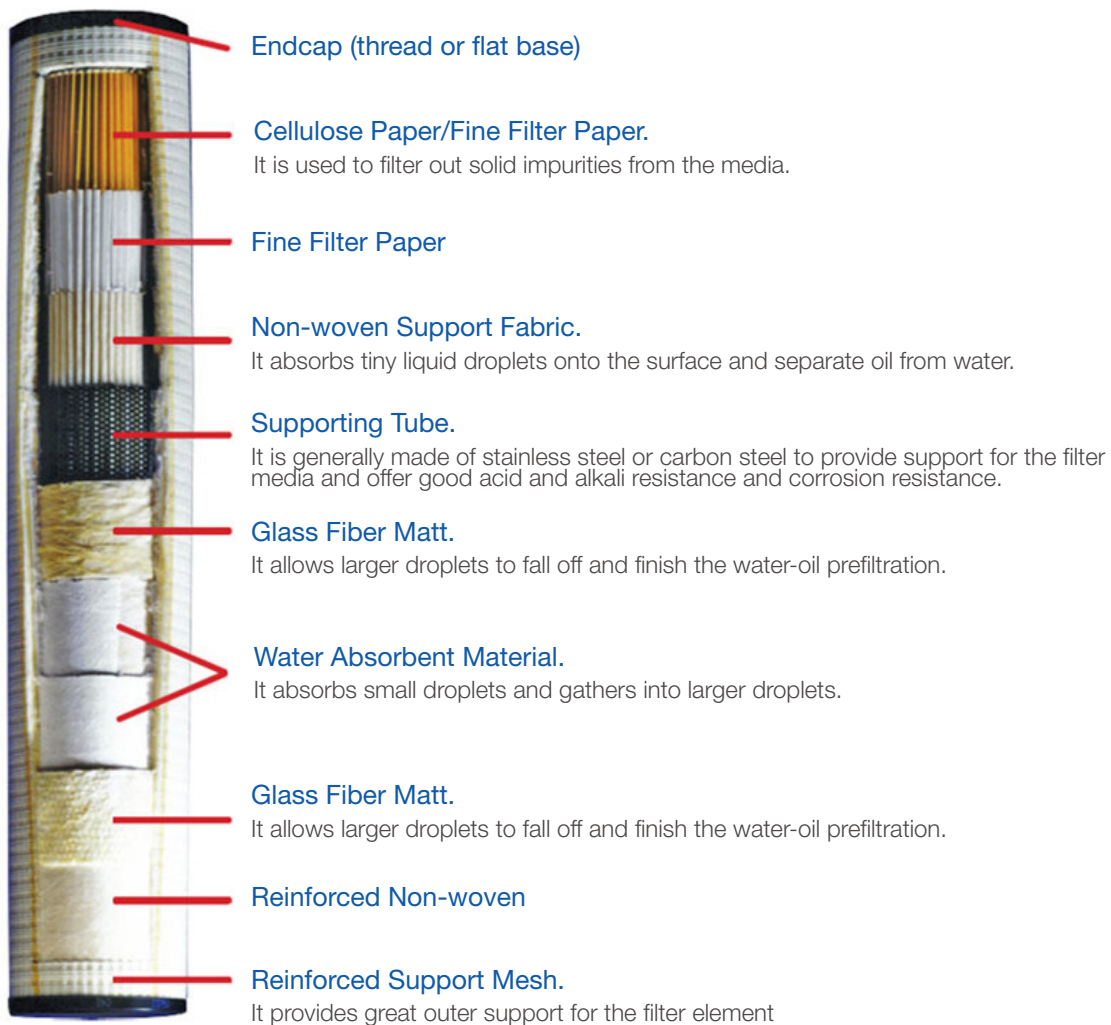
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### **Glass Fiber Coalescer Filter Element**

It is made of high density gradient glass fiber that can efficiently coalesce liquid mists and liquid droplets in the airflow with high filtration precision. In addition, it has a stable structure, no media fiber shedding, no pollution to the environment and downstream products. It has good compatibility with various fluids, and good environmental protection property.

## COALESCER FILTER ELEMENT

# Structure





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# Pleat Type



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# End Cap Type

As coalescer filter element filters out impurities from inside to outside and then coalesces tiny droplets, so it is single open ended. Generally, bolt in end caps or end caps with a handle are adopted for the sealing end while flat end caps or threaded end caps are used for the opening end.

The end caps are made of integral thermally bonded polyester, polypropylene, or metal. As for filter elements with a metal flat end cap, their seal rings can be constructed of NBR, Viton, EPDM or silicone rubber. Customers can customize the end cap type and seal material according to their needs.



**End cap with a seal ring**  
Offers good seal effect.



**Thread connection**  
Makes the filter element installation more stable.



**Seal end bolt connection**  
Makes the filter element installation firmer.



**Coalescer filter element with a handle end cap**  
Makes the installation and removal easier and faster.

## COALESCER FILTER ELEMENT

# Specification

**Filter rating:** < 0.3  $\mu\text{m}$ , 0.3  $\mu\text{m}$ , 0.5  $\mu\text{m}$ , 1  $\mu\text{m}$ , 5  $\mu\text{m}$ , 10  $\mu\text{m}$ .

**Initial differential pressure:** < 0.05 MPa

**Water separation capability:** water content  $\leq$  0.05%

**Dirt holding capacity:** 1.3 g (L/min)

**Fuel cleanliness after filtration:**

- Free and emulsified water content: diesel < 50 ppm, jet fuel/avgas < 15 ppm
- Solid impurity content: < 0.26 mg/L
- Fiber content: < 10 PCS/L

**Operating differential pressure:** 0.1 MPa

**Construction strength:** 0.7 MPa

**Recommended operating temperature:** 115  $^{\circ}\text{C}$

	BD	C	29
Company	Filter Type		Length
Boedon	Coalescer Filter Element		mm

Specifications of Coalescer Filter Element

Model	Length (mm)	Inner Diameter (mm)	Outer Diameter (mm)
BD-C-29	290	89	152
BD-C-58	580	89	152
BD-C-73	730	89	152
BD-C-86	860	89	152
BD-C-114	1140	89	152
BD-C-145	1450	89	152

**Notes:** Other specifications are available upon request.

# Features & Application

## Features

- Multilayer composite structure filter paper is used for high filtration precision
- Filter material after special processing is adopted to provide good coalescing effect.
- High dirt holding capacity, long lifespan

## Replacement Conditions

- Pressure rises. It may lead to reduced flow rate and affect the fluid flowing.
- Damaged end cap. It may result in plastic chips circulating in the filter and further leading to filtration failure.
- Flattened pleats. Contaminants in the coalescer filter element are saturated, hindering the fluid flowing
- Damaged filter media. It may cause the contaminants flowing through the fluid.

## Application



### Oil & Gas

- Jet fuel
- Gasoline, diesel, kerosene
- Turbine oil
- Lubricating oil filtration
- Natural gas filtration, etc.



### Metallurgy

- Rolling mill and continuous casting machine hydraulic system filtration
- Various lubricating equipment filtration



### Chemical

- Cyclohexane
- Isopropanol
- Cycloethanol
- Cycloacetophenone
- Other hydrocarbon compound filtration





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