

FUJIPLATE FILTER ELEMENTS

Outstanding Durability
High Precision Filtration Accuracy

Precision Laminated Metal Mesh Sintered Filter



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FUJIPLATE filter elements are ideal type surface filtration elements made up of several laminated layers of various alloys including stainless steel mesh sintered together to form an integrated (porous) element. A very fine gauge metal mesh with accurately controlled pore size is assembled and manufactured with protective layers and reinforcement (support) layers matched to specific applications. FUJIPLATE filter elements feature excellent durability and corrosion resistance, and they are employed over a wide spectrum of industries from the biotechnology sector to the chemical, textile, and aerospace industries.

Features

- Excellent resistance to high temperatures, low temperatures and thermal shock
- Excellent mechanical strength and impact resistance
- Excellent pressure resistance (Performs well in the filtration of high viscosity fluids)
- Excellent corrosion resistance
- No delamination, mesh distortion, or runoff
- Surface filtration system ensures high precision filtration accuracy
- Excellent uniformity of filtration pores
- Large flow rate per unit surface area Excellent machinability allows a wide range of configurations
- Elements are washable and reusable resulting in major cost reductions

Applications

Polymer Sector
Machining Sector
Pharmaceutical
Food Sector Energy Sector

Biochemical sector
Measurement instruments sector
System equipment

For polymers and monomers
For lube oil and cutting oil
For recovery of catalyst crystals, refining, and reaction promotion
For petrochemical refining, LNG, nuclear condenser water
For aeration, active sludge
For sensor protection and for hydraulic and pneumatic equipment
For various filter systems

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Standard Specifications

Materials: SUS 304, SUS 316, SUS 316L

(Special materials: Hastelloy, Monel, Inconel, Nickel)

Basic plate size: (mm) 300 x 500, 500 x 1000, 1200 x 1200

Tubular size: (Dia. mm) : 10.5, 14, 18, 25, 35, 40, 50
(Length mm) : 250, 500, 750, 1000
(Dia. mm) : 35, 50, 60, 115

Pleats: (Length mm) : 250, 500, 750, 1000

Disc: (Dia. mm) : 2 to 2000 (AS required)

Thickness: 1.66 mm

Void rate: 35%

Please consult us for other mesh compositions and sizes

Operating temperature range: -270°C to +480°C

Thermal expansion coefficient: 1.6×10^{-5}

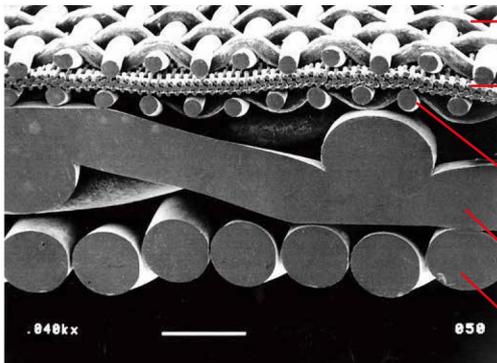
Tensile strength: 117.6MPa

0.2% pressure: 55.8MPa

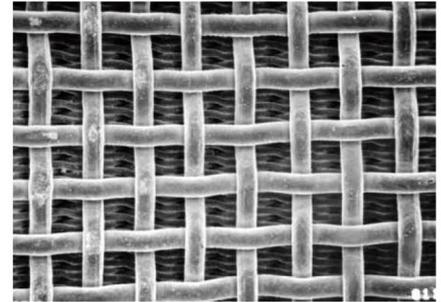
Elongation: 10% (0.2% offset) In case of 2 to 100 microns (μm)

Filtration rating: 0.5, 1, 2, 5, 10, 20, 40, 75, 150, 200 microns (μm)
(Nominal)

Structure of FUJIPLATE



- Protective layer
- Filtration (particle size) control layer
- Distribution/supporting layer
- Reinforcement layer
- Reinforcement layer

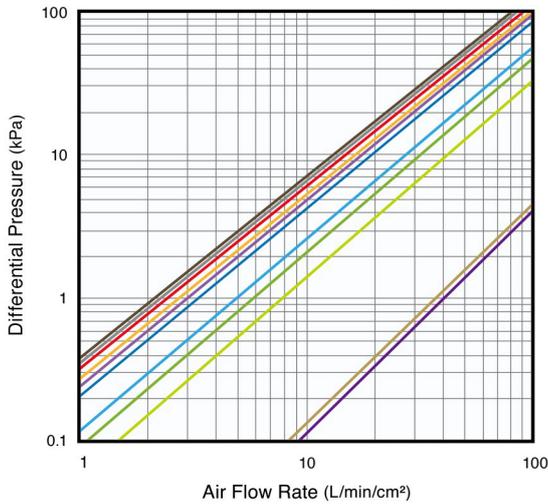


Surface of FUJIPLATE

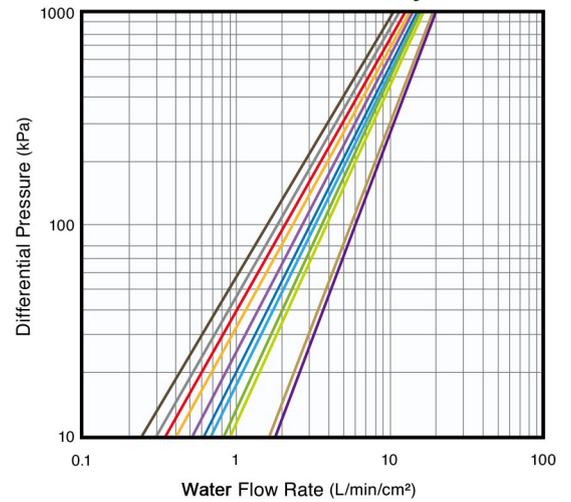
Cross-section of FUJIPLATE five-layer laminated structure

Flow rate data(FUJIPLATE flow rate chart) [this data shows permeability properties of flat plate]

Air Permiability

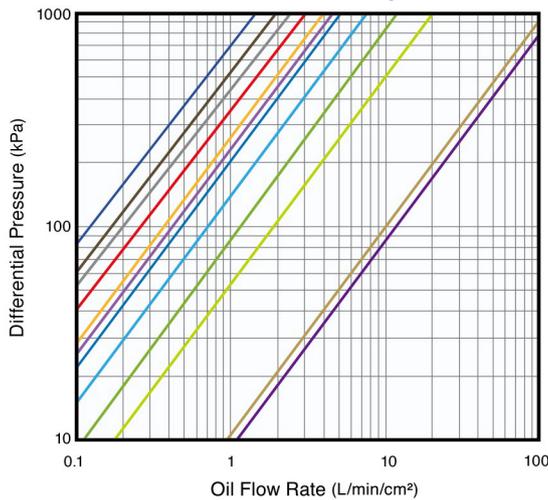


Water Permiability

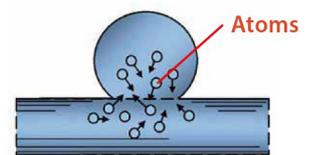
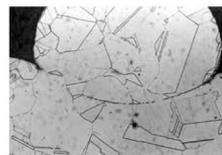


- FP - 0.3
- FP - 0.5
- FP - 1
- FP - 2
- FP - 5
- FP - 10
- FP - 20
- FP - 40
- FP - 75
- FP - 100
- FP - 150
- FP - 200

Oil Permiability



Sintering Process



When metals are maintained at a temperature near their melting point for a set period of time, metallic counter-diffusion occurs at the micro-structural level of the metal at contact points, and crystal formation takes place between metals to form a completely integrated metal structure. This gives outstanding strength, and durability is greatly enhanced.



Tubular type

Pleated type

Leaf Disc type

Configuration of elements & assemble



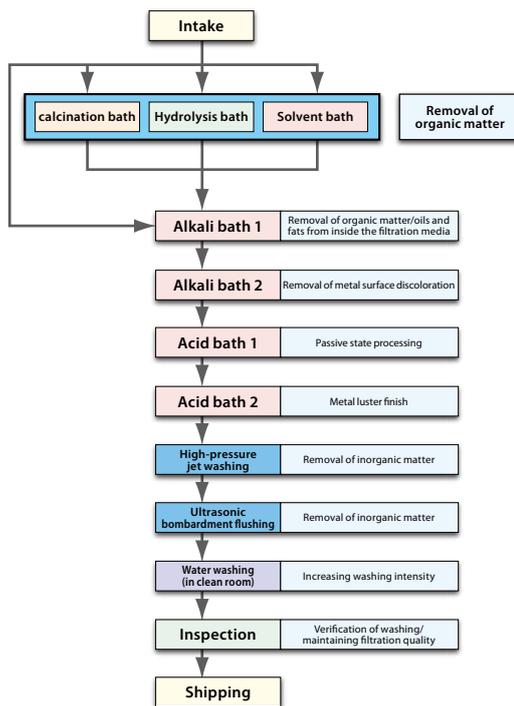
Standard dimensions

ODmm	Length mm
Ø10.5	(Standard) 250 500 750 1000
Ø14	
Ø18	
Ø25	
Ø35	
Ø40	
Ø50	

ODmm	Length mm
Ø35	(Standard) 250 500 750 1000
Ø50	
Ø60	
Ø115	

Model	ODmm	IDmm
FL-3	78	30.0
FL-4.4	111	38.1
FL5.9	149	38.1
FL-7A	178	47.6
FL-7B	178	63.5
FL-8.8A	222	47.6
FL-8.8B	222	63.5
FL-10	250	85.0
FL-12A	305	63.5
FL-12B	305	85.0
FL-15	380	101.6
FL-18	457	101.6

Cleaning



General washing for filter elements



Before washing



After washing

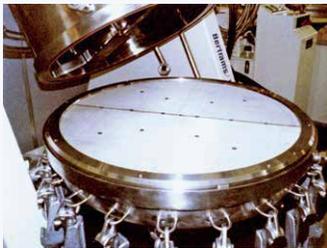
Examples of FUJIPLATE Elements



Tubular type assembly



Vacuum attachment block



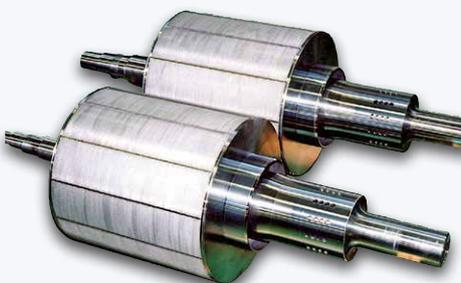
Nutche Disc Filter



Basket filters for centrifuges



Marine fuel oil filter



Nutche Disc Filter



Disc filter (Dia. 4mm to 4000mm)



Tubular type

Leaf disc type assembly



Special process star pleats



Aerators for hoppers
(upper and lower photos)



Pleated type assembly

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Applications of FUJIPLATE



Filtering

Removal of contaminants

Textile sector

Polymer filters (polyester - nylon - acrylic - polypropylene acetate, others)
Monomer filters
Pigment filters

Machining sector

Lubricating oil filters
Cutting oil filters

Pharmaceutical/Food sector

Catalyst recovery filters
Refining filters: (process filters for crystallization manufacturing stages, which must avoid corrosion and filtration pollution.

Energy sector

Oil refining process filters
Gas filters for LNG
Light water filters for nuclear power generation
Cooling circulation water filters
Ion exchange resin supplementary filters



Sparging

To let minute air or gas bubbles foam and disperse evenly in liquids

Petrochemical sector

Chemical reaction promotion filters

Food/Pharmaceutical sector

For reaction promotion for beer, champagne, carbonated soda

Biochemical sector

For growth promotion through sparging
Others including for active sludge, aeration



Ventilation

To remove dust in the air

Air breathers
Air pressure instruments, and measurement instruments
For analysis of SO_x, NO_x, HC, etc.
Gas sampling probes for flues (ducts)



Buffering

To protect from abrupt pressure fluctuations

For measuring instruments



Mixing

Uniform mixing and reaction of different liquids

Quality stabilization of highly viscous fluids
Quality homogenization of paint pigments
Ultrasonic emulsification



Flame-arrester

To prevent ignition of the secondary side by excluding flames and absorbing the explosive energy

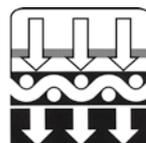
Oxygen cylinder burner backfire ignition
Flame-arrester



Sound-proofing

To absorb, direct, or deflect sound energy

Exhaust noise muffling
For acoustic equipment



Attachment

To adsorb and fix films and membranes

For semiconductor wafer attachment and transfer
For film and membrane attachment fixing and transfer



Fluidization

To provide smooth transfer of powder and film, etc. by utilizing its uniform ventilation characteristics

Air rolls Air sliders
Aerators Air bearings



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