

# DATA SHEET

## CMI SINTERED METAL SOLUTIONS



## Global Delivery and Fulfillment

The Reliable Company

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# CMI Sintered Metal Pleated Filter

## Description

CMI sintered metal pleated filter is a kind of filter made by multiple layers of sintered mesh panels or sintered fiber panels. Several layers of metal mesh or fiber are heated, pressed and bonded together by high temperature vacuum sintering, argon arc or plasma welding. Then cut, pleated into filter element. This medium has excellent heat resistance, pressure resistance, and corrosion resistance, and it is used for high temperature, high viscosity fluid filtration.

Sintered pleated filter is a typical depth filtration structure that can provide high filtration efficiency, low resistance, and large contaminant retention capability. It gives outstanding performance, especially in the removal of gel contaminants in high molecular polymer. These filtration properties ensure product quality during manufacturing processes and extended filter life. All these adds up to higher productivity and lower on maintenance costs. Besides sintered metal mesh filter cartridges, sintered mesh or fiber panels can also be formed into other filter elements like sintered metal mesh filter discs, sintered wire mesh cylinders, sintered wire mesh cones and tubes.

## Features

- Excellent resistance to high temperatures, low temperatures and thermal shock
- Excellent mechanical strength and impact resistance
- Excellent uniformity of filtration pores
- Big flow rate of unit surface area
- Applied in high pressure or high viscosity environment
- Corrosion and high temp. resistant
- Filters are washable and reusable when necessary
- Excellent machinability allows a wide range of configurations
- Bigger filtration area compared with plain types



Without protect outside



With protect outside

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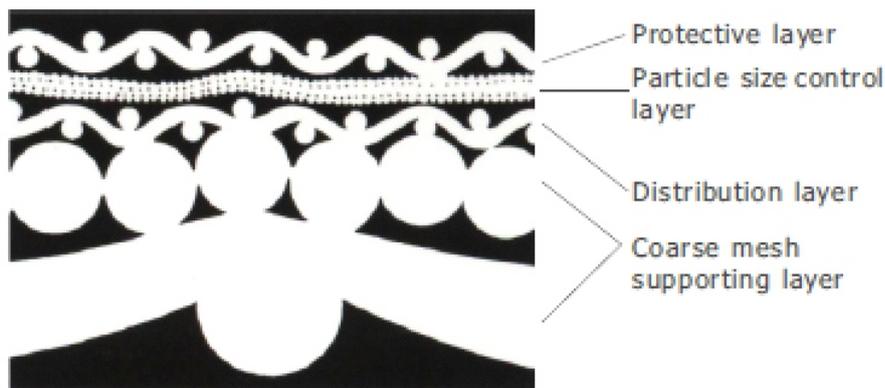
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## Data & Specifications:

- Outside Diameter of cartridges(OD): 20mm, 30mm, 50mm, acc. To customer request
- Length (inch) : 10, 20, 30, 40, 50, 60, 70, acc. To customer request
- Media Grade: 1-300  $\mu\text{m}$
- Operation Temperature:  $-269^{\circ}\text{C}$  to  $480^{\circ}\text{C}$
- Dirt Holding capacity:  $16.9\text{-}41\text{mg}/\text{cm}^2$
- End connections: standard connections like 222,220,226, quick connection, thread connection, flange connections, tie rod connections and so on.



Cross section Structure of sintered mesh filter (different products have different layers)

## Product Material:

- Stainless Steel (SS316L, SS304)

## Flow rate data:

The graph shows the filtration efficiency curves of sintered pleated fiber filter as measured by a multi-pass test. (For sintered mesh pleated filter data, pls. refer to the brochure of sintered mesh filter).

These performance curves show high filtration efficiency, a property of depth filtration media. Data from lab is for reference only; Customer shall combine actual production condition to select right filter elements

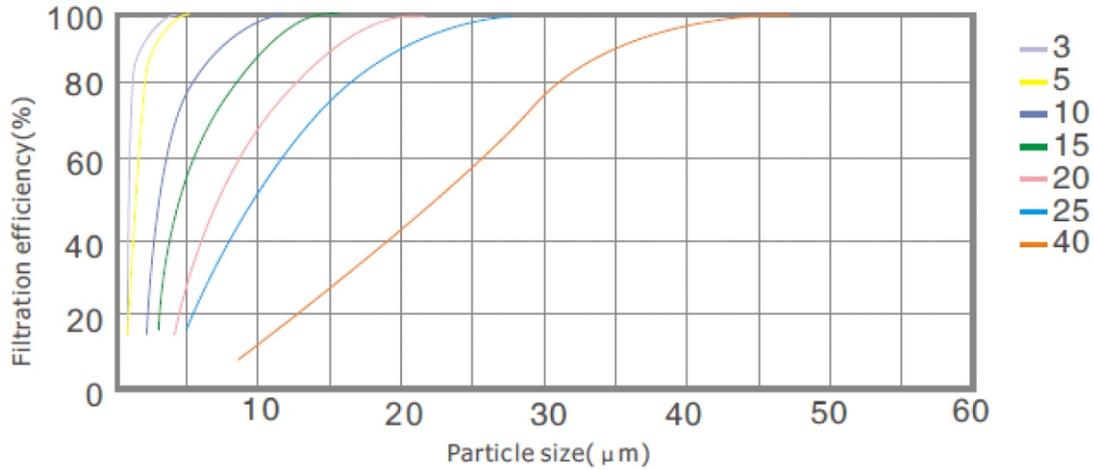
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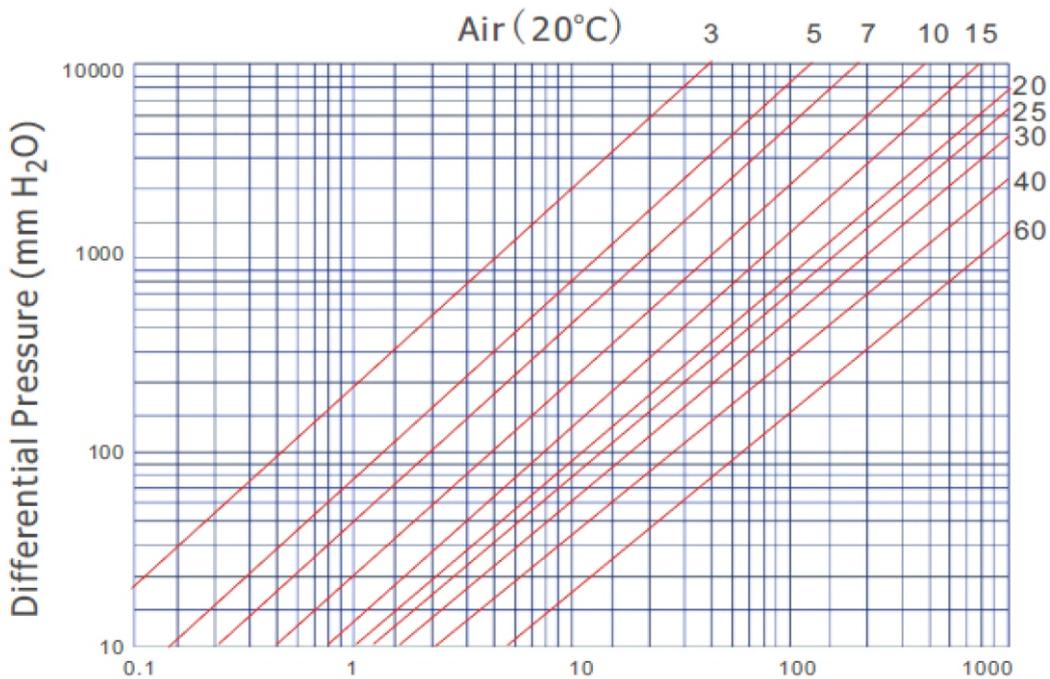


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## Filtration Efficiency and Micron ratings:

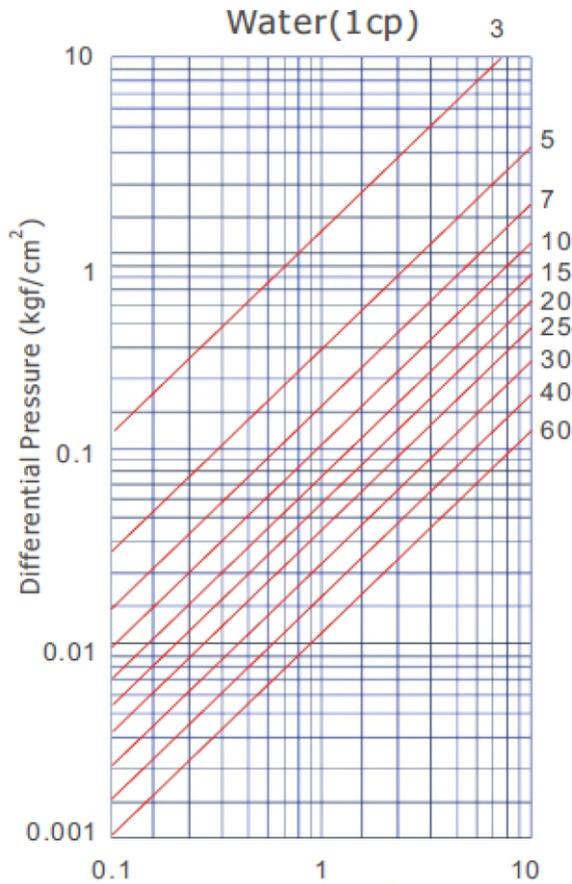


## Flow Rate of air under 20°C (l/ cm<sup>2</sup> .min)

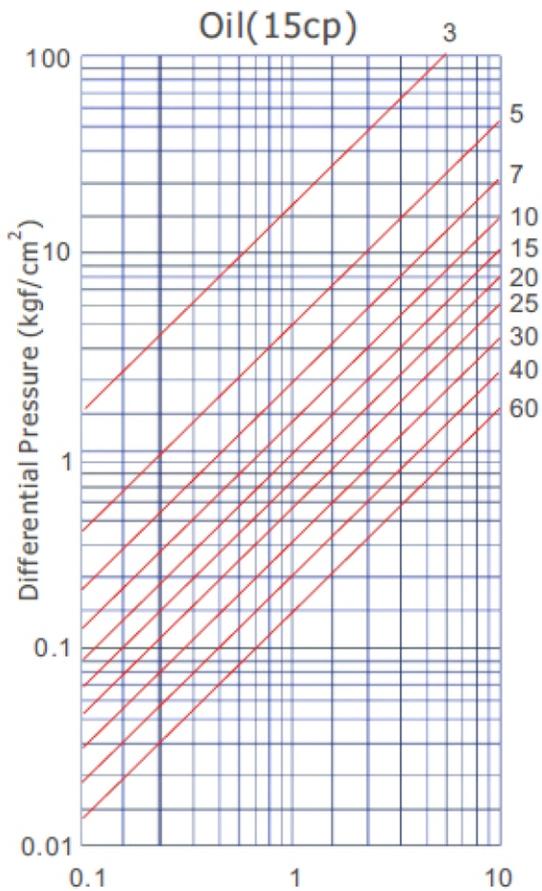


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Flow Rate of water with cp1 (l/ cm<sup>2</sup> .min)



Flow Rate of oil with cp15 (l/ cm<sup>2</sup> .min)



**NOTE:** Initial pressure loss through the filter element is calculated by the following formula.

$K_0$ : Filtration resistance coefficient (cm<sup>-1</sup>)

A: Filtration area (cm<sup>2</sup>)

$\Delta P_0$  : Initial pressure loss (kgf/cm<sup>2</sup>)

$\mu$ :Viscosity of fluid (poise=dyne sec/ cm<sup>2</sup>)

Q: Flow volume( l/min)

$$\Delta P_0 = 1.67 \times 10^{-5} \times K_0 \times (\mu * Q / A)$$

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## Data Table:

Filtration Efficiency (µm)	Bubble Point Pressure (mm H <sub>2</sub> O)	Penetration Coefficient K(cm <sup>2</sup> )	Filtration Resistance Coefficient K <sub>0</sub> (cm <sup>-1</sup> )	Contaminant Retention Capacity (mg/ cm <sup>2</sup> )	Void Percentage ε(%)
3	1250	$0.53 \times 10^{-8}$	$73 \times 10^5$	4.2	69
5	775	$1.61 \times 10^{-8}$	$23 \times 10^5$	5.3	80
7	515	$2.67 \times 10^{-8}$	$12 \times 10^5$	8.3	77
10	377	$5.78 \times 10^{-8}$	$6.4 \times 10^5$	9.6	80
15	252	$11.0 \times 10^{-8}$	$4.0 \times 10^5$	10.1	83
20	189	$23.0 \times 10^{-8}$	$2.7 \times 10^5$	16.9	85
25	151	$36.4 \times 10^{-8}$	$2.2 \times 10^5$	30.0	84
30	126	$52.9 \times 10^{-8}$	$1.7 \times 10^5$	34.4	85
40	94	$65.5 \times 10^{-8}$	$1.1 \times 10^5$	39.7	80
60	64	$121.7 \times 10^{-8}$	$0.6 \times 10^5$	41.0	87
	ISO 4003			ISO4572	

## Applications:

- Purification and Filtration of Liquid & Gas
- Separation and recovery of solid particle
- Transpiration cooling under high temperature
- High Polymer Industrial
- Aviation/Marine/Machinery
- Chemical fiber filtration
- Chemical Processing

## Ordering Table:

CODE	Media Material	OD	Length	Micron Rating	Non standard
Sintered mesh pleated --CSMP Sintered Fiber Pleated--CSFP	S-SS316L	30-30mm	200-200mm	1	-N if nonstandard
	E-SS304	40-40mm	300-300mm	5	
		50-50mm	400-400mm	10	
			500-500mm	20	