USHA FILTERS PVT. LTD.

Clean Air. From Us To You

USHA FILTERS







WE PROVIDE CLEAN AIR SOLUTIONS FOR PEOPLE PROCESS AND ENVIRONMENT

AIR FILTER
PRODUCT CATALOGUE

- MORE THAN 40 YEARS OF EXPERIENCE (SINCE 1982)
- ISO 9001:2015, ISO 45001 & ZED CERTIFIED COMPANY
- CUSTOMIZE SOLUTIONS
- SUSTAINABLE PRODUCTS

www.ushafilters.com

About USHA FILTERS

USHA FILTERS was established in MEERUT in 1982 with a manufacturing plant and state-of-the-art testing facilities. We discover top-of-the-line air filtration solutions for people, process & environment. Our advanced filters ensure clean and healthy air, enhancing your well-being. Explore our product range and experience the difference of breathing pure air. Satisfaction guaranteed.

Proudly an ISO 9001:2015 & ISO 45001: 2018 Company, we are surging forward in the air-filter industry with the name **USHA FILTERS** being synonymous for quality and commitment. Based at Meerut (70 KM from Delhi), **USHA Filters** has its own spacious manufacturing and testing facility. With the complete manufacturing being done at our own plant, we are able to bring you the most economical and quality filters with our philosophy of 'maximum value for the customer'.

The company's business is to provide customers with sustainable best-in-class air filtration products and services. With more than 40 years of experience in air filtration Industry, **USHA Filters** delivers value to customers all over India and abroad. Our products & solutions benefit human health, increase performance of machines and reduce energy consumption. With sustainable products, we are contributing something essential to everyone as well as to our planet.

Madhur Gupta
Managing Director

USHA FILTERS IN-HOUSE TEST FACILITY

USHA FILTERS operates our research and development in Meerut Plant. Our facility is equipped with the most modern instruments to determine efficiency, pressure drop, and other operating parameters of filters, in order to advance the science of filtration. Multiple test ducts which are calibrated from NABL or equivalent certified body are capable of testing pre & fine filters as per ASHRAE standard 52.2-2007, European standard EN779 and ISO 16890. HEPA Filter as per European Standard EN1822 test standard. All our measuring and testing equipments are calibrated from NABL certified labs timely. These test ducts are in constant use as **USHA FILTERS** evaluates new research & products developments, support quality audits of **USHA FILTERS** manufacturing facility, assist with customer request testing, and assesses competitor product performance. Our laboratory maintains database of all complete testing for rapid access by **USHA FILTERS** sales and support Staff.

TEST RIGS AS PER STANDARDS

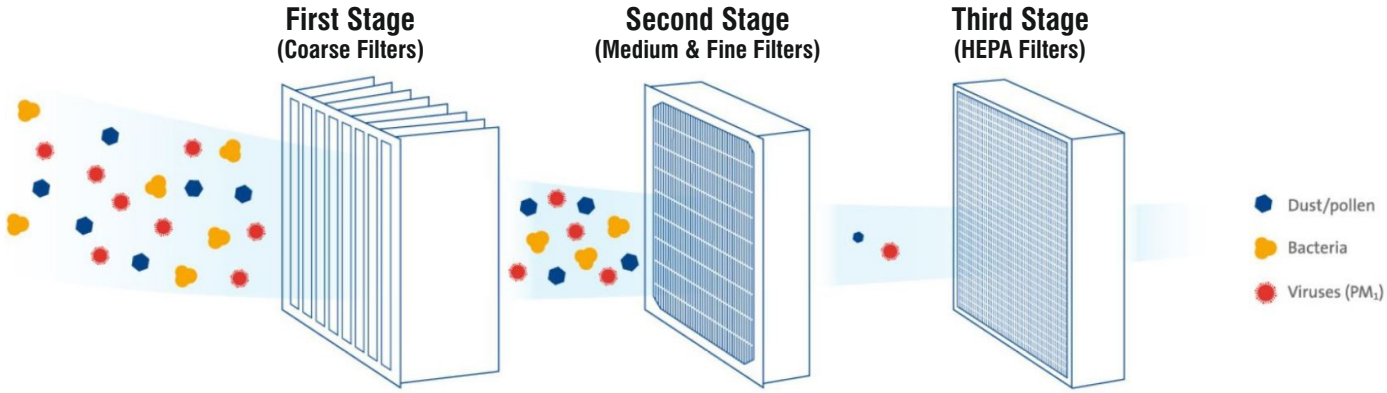
TEST RIGS AS PER STANDARDS

PARTICLE COUNTER

HEPA LEAK SCAN TEST

INDUSTRIES WE SERVE

Pharmaceutical Manufacturing • Cleanroom Manufacturers • Commercial & Public Buildings • Health Care • Life Science • Logistics • Material Process • Electronics & Optics • Food & Beverages • Energy & Power Systems • Waste Recycles • Transportation

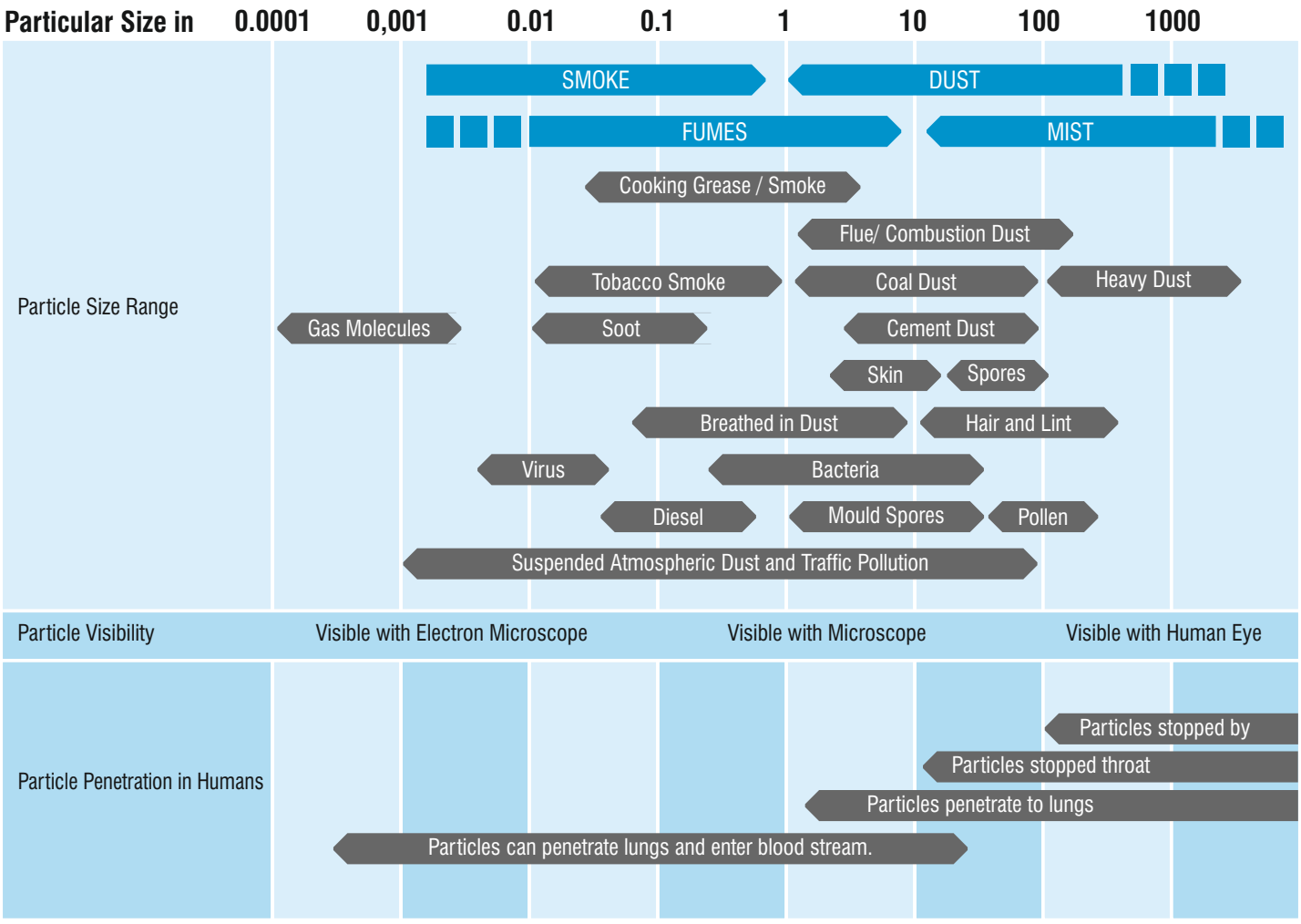


The Theory of **FILTRATION**

STRAINING I IMPINGEMENT I INTERCEPTION I DIFFUSION I ELECTROSTATIC

Selecting filters suitable for an application can be difficult without an understanding of the principles behind the operation of the product. Many applications also have specific standards that must be followed. Over the next few pages we have provided background information and guidance to help with you filter selection.

THE BELOW CHART LISTS A NUMBER OF COMMON TYPES OF AIRBORNE CONTAMINANTS, BOTH PARTICULATE AND FUMES.



Note: The particle boundaries are approximate and for illustration purpose only.

ULPA-Up to 99.9995% to 0.12 microns.

HEPA- Up to 99.97 efficient to 0.3 microns

Medium and Fine Grade-95% efficient to 0.4 microns.

FILTER STANDARDS

ASHRAE 52.2				ASHRAE 52.1				EN779:2012		EN1822:2009	
Particle Size Range				Test		Particle size range µm	Applications	Class	Average 0.4 µm	Class	MPPS Efficiency %
MERV	3 to 10 µm	1 to 3 µm	0.3 to 1 µm	Arrestance	Dust Spot						
1	<20%	-	-	<65%	<20%			G1	-	-	-
2	<20%	-	-	<65-70%	<20%	>10	Residential light pollen, dust mites.	G2	-	-	-
3	<20%	-	-	70-75%	<20%			G2	-	-	-
4	<20%	-	-	>75%	<20%			G2	-	-	-
5	20-35%	-	-	80-85%	<20%			G3	-	-	-
6	35-50%	-	-	>90%	<20%	3.0-10	Industrial dust, mold, spores	G3	-	-	-
7	50-70%	-	-	>90%	20-25%			G4	-	-	-
8	>70%	-	-	>95%	25-30%			G4	-	-	-
9	>85%	<50%	-	>95%	40-45%			G4	-	-	-
10	>85%	50-65%	-	>95%	50-55%	1.0-3.0	Industrial legionella, dust.	M5	40~60%	-	-
11	>85%	65-80%	-	>98%	60-65%			M6	60~80%	-	-
12	>90%	>80%	-	>98%	70-75%			M6	60~80%	-	-
13	>90%	>90%	<75%	>98%	80-90%			F7	80~90%	E10	⩾ 85
14	>90%	>90%	75-85%	>98%	90-95%	0.3-1.0	Hospitals, smoke removal, bacteria.	F8	90~95%	E11	⩾ 95
15	>90%	>90%	85-95%	>98%	~95%			F9	>95%	E12	⩾ 99.5
16	>90%	>95%	>95%	>98%	>95%			-	-	H13	⩾ 99.95
17	-	-	>99.97%					-	-	H14	⩾ 99.995
18	-	-	>99.99%			<0.3	Cleanrooms, surgery, chemi-bio, viruses.	-	-	U15	⩾ 99.9995
19	-	-	>99.999%					-	-	U16	⩾ 99.99995
20	-	-	>99.9999%					-	-	U17	⩾ 99.999995

Note: European and American test methodologies vary and therefore it is not possible to make direct comparisons between the standards. The above table is provided as a guide only. **Usha Filters** Pre / coarse, Medium & Fine Grade filters also comply with the latest standard ISO16890. **Usha Filters HEPA filters** also comply with standard ISO 29463**. Usha Filters** also provide filters in complaince to EN45545 HL (1-3) GRADE for Railroad application.

The classification of air filters based on the minimum efficiency of a filter measured on 0.4 um particles - as we did under En779 - is a thing of the past. Thanks to the ISO16890 standards, we can provide insight into the extent to which certain filters offer protection against particulate matter. We now evaluate filters using a test substance that consists of particles that vary in size between 0.3 and 10 micron.

How are the Filters tested?

To determine what a filter does not catch, we place the filter in a test bench. In this test bench we determine the efficiency (Ei) of the filter with the standardized test substance. We measure efficiency with:

ePM1	0.3-1 microns
ePM2.5	0.3-3 microns
ePM10	0.3-10 microns

The filter than goes for 24 hours in a special cabinet where IPA (Isopropyl alcohol) is sprayed. In this way we eliminate the effect of any electrostatic charge. We put the filter back into the test bench and again measure the efficiency (E_{di}).

The average efficiency then becomes:

$E_{ai} = 0{,}5 \cdot (E_i + E_{di})$

Classification according to ISO16890

ISO 16890 classifies air filters into 4 groups. To fall into a certain group, a filter must capture at least 50% of the respective particle size. If a filter catches more than 50% of the Pm1 particles, it is an ISO ePM1 filter. If a filter catches less than 50% of the PM 10 particles, it falls under the ISO Coarse filters.

ISO ePM1	ePM1, min ≥ 50%
ISO ePM2.5	ePM2.5, min ≥ 50%
ISO ePM10	ePM10 ≥ 50%
ISO Coarse	ePM10 ≤ 50%, classification based on initial Arrestance

A distinction is made within the various groups based on percentage efficiency. We round this percentage down to 5%. If you are looking for a filter that captures 60% of all particles smaller than 1 micron, then choose an ePM1 60% filter. If 80% of those particles have to be stopped, then an ePM1 80% filter is the right option.

How to choose filters?

Eurovent 4/23 was first developed in 2017 with further iterations released in 2018 and 2020. The standard gives clear guidance on the filtration efficiency that should be chosen depending on the commercial and industrial use of the building.

Supply air category	Description	Outdoor air (ODA 1)	Outdoor air (ODA 2)	Outdoor air (ODA 3)	Recommended air changes
SUP1	Areas with high hygienic demands-Food and beverage production, hospitals pharmaceutical, optics and microelectronics	ePMI 70%+	ePMI 80%+	ePMI 90%+	9-12
SUP2	Medium Hygenic demands or rooms of permanent occupancy-Offices hotels, schools and commercial buildings	ePMI 60%+	ePMI 70%+	ePMI 80%+	5-8
SUP3	Basic hygienic demands, short term occupation shopping centres, server rooms and copier rooms	ePMI 50%+	ePMI 60%+	ePMI 60%+	3-5

Outdoor Air (ODA)-The outdoor air quality is determined by WHO guideliness **Supply Air (SUP)**-Supply air category is determined by the workplace practices in the building

COARSE FILTERS

EN 779:2012 / ISO16890
FILTER GRADE : G2-G4 / COARSE

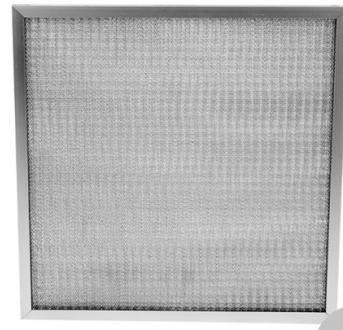
UFPL MEDIA ROLL
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 5-6, MERV 6-8
• Polyester Synthetic white and green glass fibre

UFPL PANDUST FILTER
Efficiency :
EN 779 2012: G3
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 5-6
• Disposable filter with glass fibre media & cardboard frame

UFPL PANFIL FILTER
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 6-8
• Z type pleated synthetic media with back mesh support & cardboard frame

Washable

UFPL METAFIL FILTER
Efficiency :
EN 779 2012: G1-G2-G3
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 2-4
• Multiple layer stainless steel medium with frame stainless steel



Washable

UFPL ALUFIL FILTER
Efficiency :
EN 779 2012: G1-G2
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 2-4
• Aluminium mesh media with frame galvanized and aluminium

UFPL PLAIN PANEL FILTER
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 6-8
• Plain Polyester media with galvanized, Aluminium frame & mesh support

UFPL MULTIPLEAT FILTER
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 6-8
• Z pleated polyester media with galvanized aluminium frame & aluminium mesh & HDPE support

250°C

UFPL HT PRE FILTER
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : MERV 5-6, merv 6-8
• Z pleated glass fiber progressive density media with galvanized | aluminium frame

UFPL COARSE POCKET FILTER
Efficiency :
EN 779 2012: G3-G4
ISO 16890 : ISO Coarse
ASHRAE 52.2 2017 : Merv 6-8
• Polyester Media with Galvanized frame

Note: Filters can be made various Tailor made size and type as per manufacturer recommendation
For Products TDS / Drawing- Please contact us

MEDIUM AND FINE FILTERS

EN 779:2012 / ISO16890
FILTER GRADE : M5-F9

UFPL RESDUST FILTER

Efficiency :
EN 779 2012: M5-M6
ISO 16890 : ISO Coarse, eMP10
ASHRAE 52.2 2017 : MERV 10-11
• Z pleated synthetic media with back mesh support & cardboard frame

UFPL AERO-POCKET FILTER

Efficiency :
EN 779 2012: M5-F9
ISO 16890 : ePM10-ePM1
ASHRAE 52.2 2017 : MERV 11-16
• Synthetic media with galvanized and aluminium frame

UFPL SYNTHETIC FINE FILTER

Efficiency :
EN 779 2012: M5-F9
ISO 16890 : ePM10-ePM1
ASHRAE 52.2 2017 : MERV 11-16
• Z pleated Synthetic Media supported by HDPE mesh one side and other side Aluminium mesh with Galvanized and Aluminium Frame / Rod type Constructed Synthetic Media supported by HDPE mesh both side with frame Galvanized and Aluminium

UFPL DEEP PLEAT GLASS FINE FILTER

Efficiency:
EN7792012: M5 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 11-16
Glass fiber Media with corrugated aluminium separator sealed by PU with frame Galvanised and Aluminium for normal and high flow application

UFPL HT DEEP PLEAT GLASS FINE FILTER

Efficiency:
EN7792012: M5 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 11-16
Glass fiber Media with corrugated aluminium separator sealed by silicone sealant with frame SS304for normal and high flow application

UFPL MINIPLEAT FINE FILTER

Efficiency:
EN7792012: M5 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 11-16
Glass fiber Media with hotmelt separator sealed by PU sealant with frame Aluminium extruded profile for normal and high flow application

UFPL V CELL FINE FILTER

Efficiency:
EN7792012: F7 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 12-16
-Mini pleat glass fiber media with plastic or ABS frame for high flow only

UFPL V BANK FINE FILTER

Efficiency:
EN7792012: F7 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 12-16
-Mini Pleat Glass fibre media with galvanized & Aluminium Frame for high flow only

UFPL GT FINE FILTER

Efficiency:
EN7792012: F7 – F9
ISO 16890: ePM10 – ePM1
ASHRAE 52.2 2017: MERV 12-16
80/20 Polyester & Cellulose Media, sometimes 100% Polyester dimple lock pleated media, cylindrical and conical in shape with caps galvanised powder coated.

Note: Filters can be made various Tailor made size and type as per manufacturer recommendation
For Products TDS / Drawing- Please contact us

EPA, HEPA, ULPA & CHEMICAL FILTERS

(Manufactured in clean room environment)

EN 1822
FILTER GRADE:
E10-E11-E12-H13-H14-U15-U16-U17

UFPL DEEP PLEAT HEPA FILTER

Efficiency:
EN1822: E10 – H14
Glass fiber Media with corrugated aluminium separator sealed by PU with frame anodized aluminium for normal and high flow application

UFPL MINI PLEAT HEPA FILTER

Efficiency:
EN1822: E10 – H14
Minipleat Glass Fiber media with extruded anodized aluminium frame and gasket at air inlet side, Ex Frame Profile: 69 mm, 90 mm 150 mm

UFPL MINI PLEAT GEL HEPA FILTER

Efficiency:
EN1822: E10 – H14
Minipleat Glass Fiber media with extruded anodized aluminium frame with silicon base GEL at air inlet side Ex Frame Profile:81mm 105mm, 149 mm

UFPL HT DEEP PLEAT HEPA FILTER

Efficiency:
EN1822: E10 – H14
Glass fiber Media with corrugated aluminium separator sealed by high temperature silicon sealant with frame Stainless steel for normal and high flow application

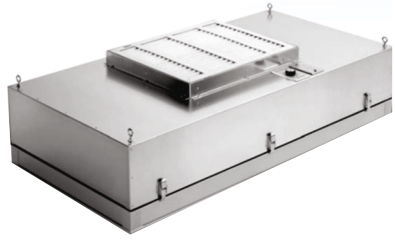
UFPL V BANK HEPA FILTER

Efficiency:
EN1822: E10 – H14
Glass fiber Media with galvanised and anodized aluminium frame for high flow only

UFPL DISPOSABLE HEPA FILTER HOUSING & ROOM SIDE REPLACEBALE HEPA FILTER HOUSING WITH GRILL

Efficiency:
EN1822: H13 – H14

- For disposable Hepa filter housing – Glass fiber mini pleated media with extruded anodized aluminium frame housing with round / square collar, diffuser plate at air inlet side, Ex Frame Profile: 152 mm, 175 mm
- For room side replaceable filter housing Glass fiber mini pleated Gel seal filter with extruded anodized aluminium frame housing with bevel gear & without bevel gear damper, upper side and sideways diffuser plate at air inlet side, Ex Frame Profile: 152 mm,175 mm, 220 mm



UFPL FAN FILTER UNIT

Efficiency:
EN1822: H13 – H14
Fan filter units are stand-alone units with integrated HEPA filter, fan and control system. They supply purified air to cleanrooms and laboratories within the life-science, food & beverage and microelectronic industries by removing harmful airborne particles from recirculating air. Unlike pressurized cleanroom ceiling plenums FFUs create a positive room pressure that reduces the contamination risk from potential ceiling bypasses. Available in size
- 610 X 610 X 275 mm &1220 X 610 X 275 mm

UFPL PANEL CARBON FILTER

Activated Carbon granule blended with synthetic media Z pleated or plain type.

UFPL V BANK CARBON FILTER

Wide Ranges of Activated carbon granules (based on application) blended with synthetic media assembled in plastic / ABS frame, specially for high flow applications

Note: Filters can be made various Tailor made size and type as per manufacturer recommendation
For Products TDS / Drawing- Please contact us

WE WORK ON PASSIVE FILTRATION TECHNOLOGY
KEY COMPONENT IN AIR FILTERS IS FILTER MEDIA - WE CHOOSE THE RIGHT FILTER MEDIA WHICH WILL PASS THE MAXIMUM AIR VOLUME FLOW RATE AT THE MINIMUM PRESSURE DIFFERENTIAL AND OFFERS THE HIGHEST FILTRATION EFFICIENCY.

USHA FILTERS ALSO OFFERS

SERVICES : ROBOTIC DUCT CLEANING, CLEAN ROOM VALIDATION

DO'S AND DON'TS IN USING AND CHOOSING AIR FILTERS

- Air filters are sensitive equipments and needs to be handled with care.
- Servicing instructions are to be strictly followed and violations will result in damage to the Air filter.
- Not all USHA Filter make air filters are water washable. While washing web structure of filter media fibres get destroyed, which may lead to poor performance, Hence refer to manufacture recommendation.
- Ensure that the Air filters are completely dry after water washing.
- Never dry the water washed air filters under direct sunlight.
- Always lift or carry an air filter by using the handle provided.
- Never carry or handle an Air filter by its filtration media or media support structures.
- Mount the air filters in accordance with the air flow direction marked in the Air filter.
- Replace Air filters that have physical damages.
- Replace Air filters with fungal growth.
- ULPA, Hepa and Super Fine filters are extremely fragile equipments. Utmost care is needed while handling them.
- Ensure that the filters are fitted properly without any leaks around the filters. Also ensure there are no leaks in the filter mounting arrangements.
- Always specify Grade (or) Micron level and efficiency, Air flow rate, Air flow direction and application of the Air filters while ordering.
- Compare Air filters based on Differential pressure and Filtration Efficiency @ rated flow rate, Filtration media detail, Filtration media area, Casing detail, Sealant and gasket detail.

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