

Air Filter Application Guide

Merv Group	Merv #	Arrestance Ashrae 52.1	Ashrae 52.1 Dust Spot Efficiency	Particle Size Efficiency (PSE) %			Min. Final Resistance (in w.g.)	Typical Controlled Contaminants	General Filter Type	General Application
				Range 1 0.3-1.0 µm	Range 2 1.0-3 µm	Range 3 3.0-10.0 µm				
1	1	<65%	<20%	N/A	N/A	E3<20	0.3	Pollen, household dust	Throwaway- Disposable, fiberglass or synthetic panel filter, automatic roll filter media	Minimum Filtration- Residential
1	2	65%-70%	<20%	N/A	N/A	E3<20	0.3	Dust Mites, sanding dust	Washable- aluminum sprayed with adhesive coat, foam rubber panel filter	Minimum Filtration- Residential
1	3	70%-75%	<20%	N/A	N/A	E3<20	0.3	Paint Dust, Textile fibers	Electrostatic- Self-charging (passive) woven polycarbonate panel filter	Minimum Filtration- Residential
1	4	75%-80%	<20%	N/A	N/A	E3<20	0.3	Carpet Fibers	Electronic Air Cleaners- two stage high voltage with 1" to 3" depth collecting plates	Minimum Filtration- Residential
2	5	80%-85%	<20%	N/A	N/A	20≤E3<35	0.6	Snuff, Powdered Milk	Throwaway- Disposable, fiberglass or synthetic panel filter, ring panel filters, automatic roll filter media	Commercial Buildings Residential Industrial Workplaces Paint Booth Inlet Air
2	6	85%-90%	<20%	N/A	N/A	20≤E3<35	0.6	Dusting, cement dust	Electronic Panel Filter- Flat panel Filters with Internal Charged Grid	Commercial Buildings Residential Industrial Workplaces Paint Booth Inlet Air
2	7	>90%	<20%	N/A	N/A	20≤E3<70	0.6	Hair Spray, fabric protection	Cartridge Filter- graded density viscous coated cube or pocket filter synthetic media	Commercial Buildings Residential Industrial Workplaces Paint Booth Inlet Air
2	8	>90%	25%-30%	N/A	N/A	70≤E3	0.6	Mold spores	Pleated Filter- disposable extended surface 1" to 5" thick with cotton polyester blend media and cardboard frames	Commercial Buildings Residential Industrial Workplaces Paint Booth Inlet Air

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3	9	>90%	40%-45%	N/A	#2<50	85≤E3	1.0	Nebulizer drops welding fumes	Cleaners -two stage high voltage, typically 3000 to 650000 volts DC on 4" depth collector cells and 6000 to 8000 volts DC on ionizing wires	Residential
3	10	>90%	50%-55%	N/A	50≤E2<65	85≤E3	1.0	Coal dust, auto emission	Box Filters -rigid style cartridge filters 6" to 12" deep	Hospital Laboratories
3	11	>90%	60%-65%	N/A	65≤E2<80	85≤E3	1.0	Lead Dust, Milled flour	Bag Filters -non supportive media synthetic or glass, 12" to 36" deep, 3 to 12 pockets	Better Commercial Buildings
3	12	>90%	70%-75%	N/A	80≤E2	90≤E3	1.0	Legionella, humidifier dust	Box or Bag Filter - see above	Superior Residential Buildings
4	13	>98%	80%-90%	E1<75	90≤E2	90≤E3	1.4	Copier Toner, face powder	Box or Bag Filter - see above	Superior Residential Buildings
4	14	>98%	90%-95%	75≤E1<85	90≤E2	90≤E3	1.4	Insecticide dust, most smoke	Box or Bag Filter - see above	Smoking Lounges
4	15	>98%	>95%	85≤E1<95	90≤E2	90≤E3	1.4	Droplet nuclei (Sneezing) cooking oil	Box or Bag Filter - see above	General Surgery
4	16	>98%	-	95≤E1	95≤E2	95≤E3	1.4	All bacteria, most tobacco smoke	Box or Bag Filter - see above	Hospital Inpatient Care
5	17	N/A	N/A	≥99.97% efficiency on 0.3 micron particles, IES Type A			1.4	Radon Progeny	Hepa Filter	Orthopedic Surgery
5	18	N/A	N/A	≥99.99% efficiency on 0.3 micron particles, IES Type C			1.4	All Combustion	Hepa Filter	Carcinogenic Materials
5	19	N/A	N/A	≥99.999% efficiency on 0.3 micron particles, IES Type D			1.4	Sea Salt	Hepa Filter	Pharmaceutical Mfg.
5	20	N/A	N/A	≥99.999% efficiency on 0.1 to 0.2 micron particles, IES Type F			1.4	Carbon Dust Virus (Unattached)	Hepa Filter	Radioactive Materials & Cleanrooms