



# HIGH-EFFICIENCY AIR FILTERS

HERE'S A QUICK LOOK AT THE TYPES OF HIGH-EFFICIENCY AIR FILTERS AND HOW THEY ARE USED.

## HIGH-EFFICIENCY PLEATED FILTERS

MERV ratings from 11-14.

These are the standard when it comes to most HVAC systems, because they are easy to install, come in standard sizes and have a low initial cost.

### ADVANTAGE:

Energy Efficient and Environmentally Friendly

### WHERE THEY ARE USED:

Commercial, healthcare, municipal, government, hospitality and residential



## RIGID CELL FILTERS

MERV ratings from 11-14.

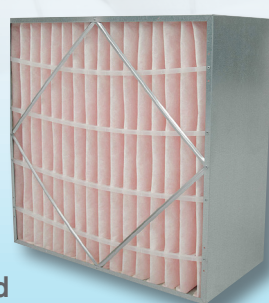
These filters come in a box-style format and contain either synthetic media or fiberglass. Rigid cell filters look similar to pleated filters but have a depth of 6-12 inches and are surrounded by a galvanized metal or plastic frame.

### ADVANTAGE:

Durability

### WHERE THEY ARE USED:

Commercial and industrial HVAC systems, VAV systems, high-humidity applications, clean rooms, healthcare, food service and manufacturing



## POCKET FILTERS

MERV ratings up to 14.

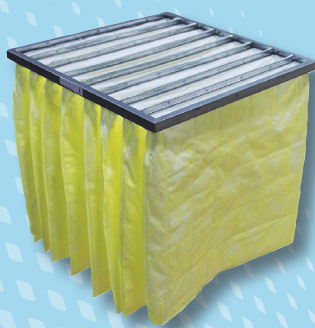
Also referred to as bag filters, pocket filters are constructed of a plastic or galvanized steel frame and contain fiberglass or synthetic media. They are called pocket filters because the media is stitched or sonically welded to form pockets ranging from 10 to 36 inches deep.

### ADVANTAGE:

Long Service Life

### WHERE THEY ARE USED:

Commercial, educational, healthcare, government and manufacturing



## HEPA FILTERS

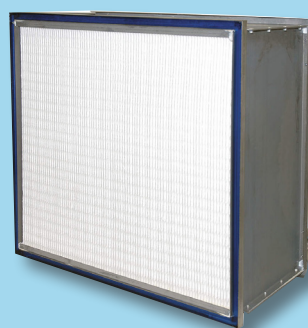
Not MERV rated because they must offer efficiency of at least 99.97% and up to 99.99% of airborne particles 0.3 microns in size to qualify as HEPA.

### ADVANTAGE:

Highest Efficiency

### WHERE THEY ARE USED:

Clean rooms, medical facilities, laboratories, airplanes, commercial, industrial, residential



## WHAT IS MERV?

**MERV** stands for the **Minimum Efficiency Reporting Value** of a filter. It is a method of stating the efficiency of a filter based on particle size and is determined by testing the performance of the filter when exposed to particles of a known size in the air stream.

MERV can be used as a guide to selecting filters for specific contaminants within a range of particle sizes.

# 1-4

### Control These Contaminants:

>10.0 Micron Particle Size  
Pollen, Dust Mites, sanding dust, textile/carpet fibers

### Applications:

Minimum Filtration, Residential furnaces, window air conditioners

# 5-8

### Control These Contaminants:

3.0-10.0 Micron Particle Size  
Mold, Spores, Dusting Aids, Cement Dust

### Applications:

Commercial Building, High End Residential, Industrial Work Spaces, Paint Booth Inlet Air

# 9-12

### Control These Contaminants:

1.0-3.0 Micron Particle Size  
Legionella, Lead Dust, Humidifier Dust, Coal Dust, Nebulizer Dust

### Applications:

High-End Residential, Commercial Buildings, Hospital Laboratories

# 13-16

### Control These Contaminants:

0.30-1.0 Micron Particle Size  
All Bacteria, Tobacco Smoke, Sneeze Nuclei, Most Smoke, Insecticide Dust, Copier Toner, Face Powder

### Applications:

Hospital Patient Care, General Surgery, Smoking Lounges, Superior Commercial Buildings

# 17-20

### Control These Contaminants:

<.30 Micron Particle Size  
Virus (Unattached), Carbon Dust, Sea Salt, All Combustion Smoke, Radon Progeny

### Applications:

Cleanrooms, Radioactive Materials, Carcinogenic Materials, Pharmaceutical Manufacturing, Orthopedic Surgery

## GET THE BEST FILTER FOR THE JOB

A higher efficiency filter, while sometimes more expensive, can help cut down on energy use and may also require less maintenance.

[Read the full article here.](#)



Sources: The following sources were consulted to create this Infographic

1. <http://www.grainger.com/tps/air-handler-high-filtration.pdf>
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6. Life Cycle Costing of Air Filtration By B. Dean Arnold, Member ASHRAE; David M. Matela; and Alan C. Veeck, Member ASHRAE
7. [http://www.engineersedge.com/filtration/hepa\\_filter.htm](http://www.engineersedge.com/filtration/hepa_filter.htm)
8. <http://www.epa.gov/epp/pubs/about/about.htm#>