

What a MERV Rating Means

The acronym MERV stands for "Minimum Efficiency Reporting Value." MERV ratings are used to rate the ability of an air cleaner filter to remove dust from the air as it passes through the filter. MERV is a standard used to measure the overall efficiency of a filter. The MERV scale ranges from 1 to 16, and measures a filter's ability to remove particles from .30 to 10 microns in size. To give you an idea of the scale of a micron, 100 microns is about the thickness of a piece of paper or a human hair. Filters with higher ratings not only remove more particles from the air, they also remove smaller particles.

MERV ratings are determined by adding particles of varying sizes into a controlled testing environment. The particles are added upstream of the test filter and a laser particle counter samples the air before it enters the filter and after it leaves the filter. The two particle counts are compared to calculate the Particle Size Efficiency of the tested filter. Once this is determined, a MERV Parameters chart is used to determine the MERV rating.

See the MERV Rating Chart below for more information about the difference in performance between filters with different MERV ratings.

MERV Rating Chart

| MERV Rating | Dust Spot Efficiency* | Typical Controlled Contaminant | Applications | Air Filter Type |
|-------------|-----------------------|--|---|--|
| 1 | <20% | >10.0 micron Particle Size Pollen, Dust Mites, Sanding Dust, Spray Paint Dust, Textile Fibers, Carpet Fibers | Minimal Filtration Residential Window A/C Units | Throwaway - Disposable fiberglass or synthetic panel filter Washable - Aluminum mesh Electrostatic - Self charging woven panel filter |
| 2 | <20% | | | |
| 3 | <20% | | | |
| 4 | <20% | | | |
| 5 | <20% | 3.0-10.0 micron Particle Size Mold Spores, Hair Spray, Fabric Protector, Dusting Aids, Cement Dust, Pudding Mix | Commercial Buildings Better Residential Industrial Workplace Paint Booth Inlet | Pleated Filters - Disposable, extended surface area, thick with cotton-polyester blend media, cardboard frame Cartridge Filters - Graded density viscous coated cube or pocket filters, synthetic media Throwaway - Disposable synthetic panel filter |
| 6 | <20% | | | |
| 7 | 25-30% | | | |
| 8 | 30-35% | | | |
| 9 | 40-45% | 1.0-3.0 micron Particle Size Legionella, Humidifier Dust, Lead Dust, Milled Flour, Auto Emissions, Welding Fumes | Better Commercial Superior Residential Hospital Laboratories Welding Booth Inlet | Bag Filter - Nonsupported microfine fiberglass or synthetic media, typically 6" - 36" deep, 6 - 12 pockets Box Filter - Rigid style cartridge filters typically 4" - 12" deep may use lofted or paper media |
| 10 | 50-55% | | | |
| 11 | 60-65% | | | |
| 12 | 70-75% | | | |
| 13 | 89-90% | .30-1.0 micron Particle Size All Bacteria, Most Tobacco Smoke, Proplet Nuceli (Sneeze) | Superior Commercial General Surgery Hospital Rooms Smoking Lounge | Bag Filter - Nonsupported microfine fiberglass or synthetic media, typically 6" - 36" deep, 6 - 12 pockets Box Filter - Rigid style cartridge filters typically 4" - 12" deep may use lofted or paper media |
| 14 | 90-95% | | | |
| 15 | >95% | | | |
| 16 | >95% | | | |

* Dust spot efficiency measures a filter's ability to remove large particles, those that tend to soil building interiors.