Facility Safety

# MERV Ratings for Air Filters: What Businesses Should Know

Matt Morgan | Sep 04, 2025

**With hums and whirs, a facility's heating, ventilation and air conditioning system helps control the climate, providing a consistent temperature for workers, equipment and processes. Air filters are an essential part of this scene, primarily serving to protect the HVAC system, says expert David Heritage.**

"HVAC systems work with components that need to have ***air filters*** installed or they will break down and fail," says Heritage, vice president of national accounts at Filtration Group. "You will greatly shorten the life of your unit if you don't run the appropriate level of filtration for that unit."

Manufacturers use a variety of media to create a range of filters that capture different amounts of dust based on a facility's needs. The MERV rating helps buyers to know what kind of filter they're getting—provided they know what kind of filter they need.

## What a MERV Rating Is and Why It Matters

Short for minimum efficiency reporting value, MERV is a standardized way to compare air filters. The rating's scale — which goes from 1 to 16 — indicates a filter's ability to remove particles from the air.

"The higher the number, the better the air filter is at capturing dust from the air," Heritage says.

> **"As the MERV rating goes up, you get better at capturing dust, but you also typically get more restrictive, so it gets harder to get air through that same filter."**
> David Heritage
> Filtration Group

Practically, it's best to start looking in the middle of the range.

"Even though it's a 1 to 16 scale, below 8 is in the lowest level of filtration and not really applicable to anybody who's running an air conditioning system these days," he says. "You can think of 8 as being your minimum for normal equipment protection."

*Read more: The Invisible Danger: How to Protect Against Indoor Air Pollutants*

## Understanding the MERV Rating Chart

MERV ratings are assigned based on a filter's ability to capture a certain number of particles of particular sizes. Here are the MERV ratings along with efficiency percentage by particle size in microns.

| MERV | Efficiency (%) by particle size in microns (µm) | | |
|---|---|---|---|
| | 0.30-1.0 µm | 1.0-3.0 µm | 3.0-10.0 µm |
| 1-4 | n/a | n/a | < 20% |
| 5 | n/a | n/a | ≥ 20% |
| 6 | n/a | n/a | ≥ 35% |
| 7 | n/a | n/a | ≥ 50% |
| 8 | n/a | ≥ 20% | ≥ 70% |
| 9 | n/a | ≥ 35% | ≥ 75% |
| 10 | n/a | ≥ 50% | ≥ 80% |
| 11 | ≥ 20% | ≥ 65% | ≥ 85% |
| 12 | ≥ 35% | ≥ 80% | ≥ 90% |
| 13 | ≥ 50% | ≥ 85% | ≥ 90% |
| 14 | ≥ 75% | ≥ 90% | ≥ 95% |
| 15 | ≥ 85% | ≥ 90% | ≥ 95% |
| 16 | ≥ 95% | ≥ 95% | ≥ 95% |

Some common MERV ratings are:

- MERV 8 captures greater than or equal to 20% of particles 1.0 to 3.0 microns, and greater than or equal to 70% of particles 3.0 to 10.0 microns
- MERV 11 captures greater than or equal to 20% of particles 0.30 to 1.0 microns, greater than or equal to 65% of particles 1.0 to 3.0 microns, and greater than or equal to 85% of particles 3.0 to 10.0 microns

- MERV 13 captures greater than or equal to 50% of particles 0.30 to 1.0 microns, greater than or equal to 85% of particles 1.0 to 3.0 microns, and greater than or equal to 90% of particles 3.0 to 10.0 microns

Prior to MERV, air filters were rated according to a percentage called dust spot efficiency. This retired ASHRAE rating is still frequently listed on commercial filter products, Heritage says, so employers with older HVAC units know what filters are compatible.

## MERV vs. FPR: What's the Difference?

MERV is the widely accepted air-filtration testing standard set by ***ASHRAE***, a trade organization that governs the heating, refrigerating and air-conditioning industries.

FPR is an air filter performance rating ***developed by Home Depot*** to help consumers better understand the benefits of its filtration products for the home, Heritage says. Similarly, MPR is a microparticle performance rating system ***developed by 3M*** for that company's residential filters, he says.

## Choosing the Right MERV Rating for Commercial HVAC Systems

Although MERV ratings might simplify the buying process for commercial filtration, employers still have decisions to make.

As filtration technology evolves, Heritage predicts, consumer interest could shift from MERV 8 to MERV 10. In fact, some manufacturers don't even make 8 anymore, he says.

Heritage recommends higher-rated MERV filters—such as 11 or 12—for businesses with specialized needs. One example is coating applications where dust can cause flaws.

MERV 13 is the highest-rated filter that uses the same format, and it won't require alterations to the HVAC unit to accept the deeper format of MERV 14 to 16 filters.

MERV 16 and HEPA—a type of filter that begins where MERV ends—are reserved for "very specialized and very specific" applications, Heritage says.

"If I have something that's extremely toxic—let's say in a lead battery plant, I have lead that's poisonous to people, or certain kinds of weld smoke applications—I want to capture all of it, and a HEPA filter will accomplish that," he says. HEPA, which stands for high-efficiency particulate air, removes at least 99.97 percent of particulates that are 0.3 microns in size.

*Read more: 4 Things You Need to Know Before Buying a Commercial Air Purifier*

## When Higher Isn't Better: Risks of Over-Filtration

With MERV ratings, higher isn't necessarily better. HVAC systems usually are designed for climate control, not for filtration, Heritage says, and too much filtration can strain the equipment.

"As the MERV rating goes up, you get better at capturing dust, but you also typically get more restrictive, so it gets harder to get air through that same filter," he says. "If the unit isn't designed to overcome that resistance, then it won't operate properly, and you may actually do more harm than good."

## MERV Rating FAQs

Here are answers to some frequently asked questions about MERV ratings:

### Do Pleated Air Filters Restrict Airflow?

On the contrary, pleated air filters actually help airflow. The increased surface area creates more opportunity for air to pass through the filter, giving greater filtration with less resistance.

### How Often Should MERV 8 Filters Be Changed?

How often a MERV 8 filter—or any filter, for that matter—should be changed depends on a variety of factors, such as ***air quality***, environmental conditions, HVAC system size and filter type. Experts agree that MERV filters generally should be changed every three to six months, and more often in harsh or dusty environments.

### What MERV Rating Stops Dust?

Filters of all MERV ratings stop some form of dust. It depends on how fine the dust is that you want to remove. For example, MERV 1 to 4 filters won't capture much dust. Starting around MERV 8, filters will start to capture dust smaller than 3 microns. MERV 11 and higher filters are rated to capture dust smaller than 1 micron.

### What MERV Rating Is Best for Home Use?

In most homes, air filters with a MERV rating of 8 are best. Homes with specific filtration needs, such as allergen reduction, may need a higher-rated filter, such as MERV 11 or 13.

### Is MERV 13 Too High for Residential?

MERV 13 may be too high for most residences, and even for many commercial applications. Homes and businesses with specialized filtration needs—to remove allergens or pathogens, for example—may require a MERV 13 or higher filter, or a HEPA filter.

### What Is Considered a High MERV Rating?

MERV 8 to 10 is today's standard range for commercial applications, so anything higher than that—MERV 11 to 16—would be considered a high MERV rating.

### Should I Buy MERV 8 or 11?

MERV 8 filters are suitable for most residential and commercial applications. If your occupants need cleaner air or your job creates a lot of dust in the air, then a MERV 11 filter or higher might be appropriate.

 