

Building HVAC Operating Standards

The CDC website on building operations during the COVID-19 crisis provides a link to the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) website. This source provides general guidelines on building operations as well as very technical details for HVAC systems.

Ventilation recommendations include the following:

- increase the total air flow to occupied spaces, if possible
- consider running the building ventilation system even during unoccupied times to maximize ventilation
- increase the percentage of outdoor air as high as possible while balancing both temperature and humidity
- increase air filtration as much as possible without significantly diminishing design airflow

Recommendations vary by facility type. For older buildings with windows that open, fresh air may improve airflow. The trade-off is temperature variations, humidity, insects, and allergens. Generally speaking, steps which achieve higher ventilation rates reduce risks in all buildings.

Terminology used in news reports regarding HVAC systems has been confusing. Examples include mixing “HEPA filters” and “MERV filters” in the same story.

HEPA

This refers to a pleated mechanical filter (High Efficiency Particulate Air) that is often found in air purifiers, airplanes, or vacuum cleaners. These filters were developed in World War II and commercialized in the 1950’s. It is now simply a general term for a high efficiency filter.

MERV

This is a rating system, Minimum Efficiency Reporting Values, which utilizes a 1-16 scale to rate filters. The higher the MERV rating, the more particles are captured.

Filters must be matched to the design of the HVAC system. A filter which has a very high MERV rating may actually reduce airflow or overload the fans or blowers trying to circulate air.