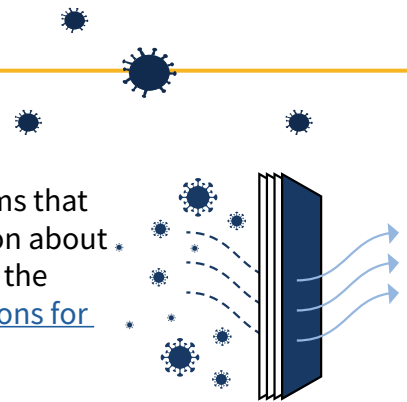


VENTILATION

TERMS

Quick Guide to Common Ventilation Terms

This document is intended to serve as a guide to commonly used ventilation terms that someone may come across when researching ventilation systems. For information about improving the ventilation of a building to reduce risk of COVID-19, please refer to the best practices tab on the VDH [Business](#) webpage. Also, see [CDC's Recommendations for Ventilation in Buildings](#).



Air flow rate: a measure of the amount of air that passes across the evaporator coil in an HVAC system. It is measured in cubic feet per minute (CFM). There are multiple ways to measure air flow rate.

Airborne transmission: when respiratory droplets carrying the virus that causes COVID-19 dry up in air, the small, dry particles can remain suspended in room. If a person inhales these particles, they can become infected with the virus. While most transmission occurs by inhaling respiratory droplets within a few feet of a person who is infected, there is evidence that some people become sick through airborne transmission. Improving ventilation dilutes and removes air that may contain infectious particles.

Air changes per hour (ACH, ACPH): the number of times the air in a room is replaced completely during an hour. The number of air changes per hour can be calculated from the volume of the room and the air flow rate, if known.

Damper: a valve or movable plate that can be opened or closed to control the flow of air. Dampers allow more or less outside air to be brought into the building. Dampers can be manually controlled or automatic.

Droplet transmission: when breathing, talking, laughing, coughing, or sneezing, we exhale small droplets of water from our lungs, mouth, and nose. If a person has COVID-19, these droplets can contain large amounts of the virus that causes COVID-19, and someone who inhales these droplets can catch COVID-19. Most of these droplets settle out from air within a few feet of the person. Masks and social distancing help prevent droplet transmission.

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HEPA: HEPA stands for high-efficiency particulate air. A HEPA filter is a type of mechanical air filter. It works by forcing air through a fine mesh that traps harmful particles such as pollen, pet dander, dust mites, and tobacco smoke.

HVAC: HVAC stands for heating, ventilation, and air conditioning. This system provides heating and cooling to residential and commercial buildings. The V in HVAC, or ventilation, is the process of replacing or exchanging air within a space. HVAC improves indoor air quality by diluting indoor contaminants with fresh air from outdoors, maintaining temperature in a comfortable range, and filtering out airborne contaminants like dust, smoke particles, and airborne particles that can carry bacteria and viruses.

Load testing: Load testing is the process of ensuring that your HVAC system is the appropriate size for the space it's responsible for ventilating. Load testing takes into account square footage, the number of windows, the direction the building faces, other surfaces that gain or lose heat, and local climate.

MERV: MERV stands for Minimum Efficiency Reporting Value. It is a standardized system for comparing the effectiveness of different air filters. The scale ranges from 3-20 with somewhere from 3-8 being typical for private homes and 20 being a HEPA filter. Higher numbers indicate that the air filter is more effective, however they also require more power to push the air through smaller holes. A filter with a MERV value that is too high for its capacity may have a reduced air flow rate.

UV-C: ultraviolet (UV) light with a wavelength 200-280 nanometers (nm). Light in this range damages living organisms and viruses. UV-C lights in an HVAC system can kill bacteria and viruses that come close to the light and remain in the area long enough. UV-C can also harm people's eyes, so in order to be used safely it should be shielded or sealed in a compartment in the HVAC. Since effectiveness depends on viruses remaining in the UV-C light long enough, having a UV-C light in your HVAC system does not guarantee all viruses in air going through it are destroyed.