



Schools and the COVID-19 Pandemic

Operating Guidance for Schools During the Pandemic

Purpose

- To assist schools with the **ongoing operations** of their facilities during the COVID-19 Pandemic
- For use in conjunction with professional advice from **engineers, building operators, etc.**
- To be used as general guidelines and not specific to any individual building

Intended Audience

- School Boards and Committees
- Superintendents
- School Business Managers
- Facilities Personnel
- Other key decision makers

High Priority Actions

This fact sheet provides summarized information extracted from expert sources including ASHRAE, the Harvard TH Chan School of Public Health, Collaborative for High Performance Schools (CHPS), and the Environmental Protection Agency (EPA). Presenting this information in a concise manner is intended to help a variety of stakeholders understand the necessary actions to reduce transmission of COVID-19 in schools.

These recommendations should be implemented expeditiously and in conjunction with strategies such as social distancing, hand washing, wearing face coverings, sanitizing shared spaces/objects, and more.

Upgrade HVAC Systems

- Upgrade to MERV 13 Filters
 - Upgrade all filters to a minimum of a MERV 13, or as high as your system allows
 - Ensure a plan is in place for the safe change of these filters on a regular basis
- Increase Ventilation Rates
 - Consider hiring a design professional to review airflows and system capacities
 - Introduce more outdoor air into spaces to dilute airborne virus particles
 - Disable Demand-Controlled Ventilation (DCV) systems (or adjust set points)
 - Eliminate (or minimize) air recirculation
 - Examine outdoor air intake locations to ensure there is no potential containment nearby (e.g. indoor air exhaust point)



- If a building does not have mechanical ventilation, open windows and use window fans to increase outdoor air intake
- Perform Daily Air Flushes
 - Run ventilation systems in occupied mode for at least two hours prior to arrival of all building occupants
- Conduct Retro-Commissioning
 - Consider hiring a qualified commissioning agent to ensure your equipment, ducts, and controls are operating as designed and maximizing their effectiveness
- Measure and Monitor CO2 Levels
 - Use smart thermostats or portable sensors to monitor CO2 levels in spaces (normal range is between 400 – 500 ppm)
- Develop a Preventative Maintenance Plan
 - Ensure systems are operating as intended by performing regular (monthly or seasonally) preventative maintenance
- Maintain Proper Relative Humidity Levels
 - Levels should be between 40-60 percent
 - Continually monitor relative humidity levels through the use of the building automation system, portable loggers, and handheld instruments
 - Consider how the heating season (in cold climates) may impact humidity levels
 - Indoor temperature should range between 68 and 78 F
- Contact your local utility, state energy office, and School Building Authority
 - In many states, utility programs (e.g. NH SAVES, Mass SAVES, and National Grid's Energy Efficiency Programs in RI) may be able to offer technical assistance and rebates for HVAC projects.

Consider Purchasing Portable Air Cleaners to Complement Mechanical Systems

Select Portable Air Cleaners (PACs) that:

- Contain HEPA filters
- Do not contain additional air cleaning features (e.g. ozone, UVC, ion-generators)
- Contribute towards at least five air changes per hour in the space

General PAC selection guidance:

- Multiple PACs can be used in one space and may be more effective than using one large PAC
- PACs are typically rated while operating on the highest fan setting. If operating a unit at a lower fan speed, its effectiveness will drop significantly.



Additional Information

Harvard T.H. Chan School of Public Health

- For assistance with the selection of appropriate PACs, based on room size, view the [Portable Air Cleaners: Selection and Application Considerations for COVID-19 Risk Reduction](#) report.
- To learn how to properly measure ventilation rates in classrooms, view the [5-Step guide to checking ventilation rates in classrooms](#)
- View the [Risk Reduction Strategies for Reopening Schools](#) report for a more in-depth review of all the actions that schools can be taking to combat the spread of the virus.

ASHRAE

- The Epidemic Task Force [developed guidance](#), including a set of checklists for specific equipment and systems. This information is intended for use by facility managers, administrators, technicians, and service providers.
- Additional information on the [Reopening of Schools and Universities](#) from ASHRAE includes guidance on filtration upgrades, controlling outbreaks, and more.

EPA

- School buildings should be regularly cleaned with products found on [EPA's List N](#) of approved products that are known to kill the Coronavirus when used accordingly.
- Ensure custodial staff and others are cleaning surfaces following these [cleaning and disinfecting guidelines](#).
- [The Indoor Air Quality Tools for Schools Action Kit](#) provides guidance on general indoor air quality best practices that schools should implement.
- See [EPA's General COVID-19](#) information including disinfectants, drinking water safety, PPE, and more.

CHPS

- View additional recommendations for improving student health through [School Ventilation for COVID-19](#)