



# Proven Indoor Air Hygiene Solutions for K-12 Schools

SAFER | HEALTHIER | MORE PRODUCTIVE

## Protecting our Children from Airborne Pathogens

Recent events have taught us that providing clean, fresh, conditioned air into classrooms is critical. Parents must feel confident of our children's safety as they return to school. Adding increased levels of fresh air and cleaning recirculated air not only benefits children, but provides a safer, healthier, and more productive indoor environment for teachers and staff.

**Infection control was likely not considered a priority when the HVAC systems in most schools were designed. However, when properly configured with the correct amount of outdoor air, adding supplemental localized air purifiers and following protocols to upgrade and replace contaminated filters every 3 months can lead to significant reductions in the spread of airborne pathogens.**

Our indoor air hygiene experts have created a helpful guide to re-opening schools and keeping students safe after re-open. Please reach out to ask any questions or contact us to assess your indoor air hygiene.

## Air Hygiene Plays a Role In Protecting Students And Faculty

By introducing increased levels of fresh outdoor air into the school, stale, potentially pathogen-laden air is exhausted out. By continually changing the air within the school, you can dramatically reduce the number of pathogens in the air.



## Increase in Outdoor Air Intake Vital to Decreasing Airborne Pathogens

Leading agencies such as ASHRAE (American Society of Heating Refrigeration and Air Conditioning Engineers), the WHO (World Health Organization), and REHVA (The Federation of European Heating, Ventilation and Air Conditioning Associations) have all recommended increased fresh air ventilation to increase the indoor air quality of building spaces.

**ASHRAE:** “provide indoor air quality that will be acceptable to human occupants and is intended to minimize the potential for adverse health effects” (*ASHRAE 62.1*)

**WHO:** “whenever possible make sure the venue is well ventilated” (*Getting your workplace ready for COVID-19*)

**REHVA:** “The general advice is to supply as much outside air as reasonably possible. The key aspect is the amount of fresh air supplied per person.” (*REHVA COVID-19 Guidance Document, March 2020*)

## Increased Conditioned Fresh Air:

- Avoid airborne contaminant recirculation
- Maintain proper humidity levels to prohibit virus, bacteria and mold reproduction and function
- Dilute VOC's, CO2 and other furniture and building material off-gas
- Provide make-up air for exhaust from kitchens, bathrooms, and other operations within the school

## Humidity Control

Humidity has a tremendous impact on indoor comfort. In high-humidity climates, typical unitary systems struggle to maintain proper levels. Poor humidity control can negatively affect the indoor air quality within the space. Addison units effectively control humidity in the complex school environments.

## The Addison Family of Products

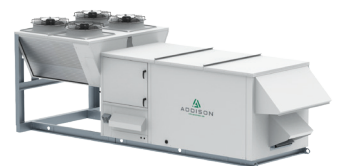
### AK Series

Compact Packaged  
Rooftop DOAS  
Capacity: 10 - 90 Tons



### PR Series

Highly Configurable  
Rooftop DOAS  
Capacity: 3 - 100 Tons



### M Series

Split DOAS or  
Recirculating  
Capacity: 3 - 180 Tons



# Additional Procedures Needed to Protect Children and Teachers

## STEP 1: Flush your system

- ☐ [ASHRAE recommends](#) you review HVAC programming to provide flushing two hours before and post occupancies. This includes operating the exhaust fans as well as opening the outside air dampers. For buildings without the capacity to treat large quantities of outside air and when outside air conditions are moderate, open all windows for a minimum of two hours before reoccupation.

## STEP 2: Inspect your current HVAC Filtration System

- ☐ Have my filters been maintained? Do I need to change them more regularly?
- ☐ Do my filters seal into their holding frames or tracks? A filter only works when it is sealed properly eliminating bypass.
- ☐ Determine your current filter efficiency. This is typically listed as a MERV rating.

## Examples of Common Upgrade Solutions:

### STANDARD

GreenPleat



- MERV 13
- Available in 1", 2", and 4" depths

### SUPERIOR

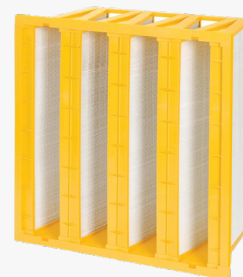
GeoPleat



- MERV 15
- Exceeds LEED MERV 13 requirement for Green Building initiative

### PREMIUM

FP Mini Pleat



- MERV 16
- Lowest initial resistance

## STEP 3: Upgrade to the optimal filter

- ☐ Upgrade efficiency to MERV 13 or higher which will capture more pathogens.
- ☐ Adding chemical filtration to your filter system can remove jet exhaust contaminants along with enhanced antimicrobial properties.

## STEP 4: Add localized air purifiers and dehumidifiers

- ☐ Consider adding localized, stand-alone air purifiers and dehumidifiers in high-traffic and commonly occupied areas to help prevent the spread of bacteria and virus.

## Filtration Group and Partners Offer Stand Alone Solutions in Addition to HVAC

### PHOENIX GUARDIAN HEPA SYSTEM

- True 1400 CFM Scrubber
- 99.97% HEPA Filtration
- Odor Control filters optional



### PURASHIELD 1000

- Patented PuraWard technology
- Removes particles via HEPA Filtration
- 50 lbs of patented antimicrobial media



## STEP 5: Implement best practices for changing out your filters

- ☐ Change out your filters every 3 months for optimal filtration.
- ☐ Ensure maintenance staff are wearing the appropriate PPE when changing filters.
- ☐ Dispose of dirty filters in sealed bags and avoid compacting if possible.

## STEP 6: Consider upgrading your HVAC system to bring in conditioned fresh, outside air

- ☐ Avoid airborne contaminant recirculation.
- ☐ Maintain proper humidity levels to prohibit virus, bacteria and mold reproduction and function.

## How Filters Help Stop The Spread of Infectious Diseases

Pathogens such as the coronavirus are transmitted through the air on carriers such as water droplets or dust particles. When someone who is infected coughs, sneezes, or even breaths, there are moisture droplets which become airborne and become the carrier of the virus. Small 0.3-1.0 micron particles are light enough to remain airborne for significant amounts of time and can contribute to the spread of the disease to others at a much greater distance.

All HVAC filters remove a range of particles and different filters have different ratings for this purpose. This is referred to as the MERV rating which stands for Minimum Efficiency Reporting Value. This is a scale from 1 to 16 with filters rated as MERV 1 capturing the least number of particles and MERV 16 filters capturing close to all the particles in the air. Choosing a filter with the correct MERV rating can have a dramatic impact on reducing the number of viral particles in the air, and therefore the chances of spreading airborne infectious diseases within your facility.

<sup>1</sup> Source: HVAC filtration for controlling infectious airborne disease transmission in indoor environments: Predicting risk reductions and operational costs by Parham Azimi and Brent Stephens, 2013 - ASHRAE Position Document on Infectious Aerosols April 14, 2020

**PLEASE CONTACT ONE OF OUR SPECIALISTS  
TO HELP YOU IMPROVE YOUR  
INDOOR AIR HYGIENE**

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