

Protecting Manitobans

VENTILATION



September 2021

This guidance is based on the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Reopening Guide for Schools. It is meant to provide practical direction to school divisions and schools to improve ventilation and HVAC operation and maintenance (O&M). Basic principles of physical distancing, surface cleaning and disinfection, hand hygiene, personal protective equipment (PPE), screening, and other public health fundamentals should not be superseded by the guidance below, as this layered approach offers the best protection.

Guidance for Schools:

If the ventilation system has not been inspected, do the following as soon as reasonably practicable:

- Have an HVAC professional inspect the system to ensure it is in proper working order, adjusted to maximize fresh air intake and has the highest level of air filtration allowable within the manufacturer's operating parameters of the existing HVAC system.
 - Assess and identify rooms designated for occupancy that do not have operable windows and that do not have a fresh air supply. **Repurpose the identified rooms if possible, or seek an engineered solution to introduce and maintain a clean air supply required for occupancy.**
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- Maintain proper indoor air temperature and humidity to maintain human comfort, reduce potential for spread of airborne pathogens and limit potential for mould growth in building structure and finishes.
 - Verify filters are installed correctly and gaskets are intact. Maximize the filters' capability by sealing the filter cabinet and eliminating any air bypass.
 - Set up a program to monitor filters for replacement, check for particulate accumulation on filters, and replace as required. Wear appropriate PPE as recommended by public health officials and Workplace Safety and Health during the checks.
 - Replace filter media with the highest level of efficiency possible including MERV-13 filters, provided that it does not adversely impact system operation.

- Disable Demand-Controlled Ventilation (DCV) systems using Carbon Dioxide (CO₂) sensors where feasible by disabling control sequence, or adjusting set points to be at or near ambient outdoor CO₂ levels (typically between 400 and 500 ppm).
- Perform initial air flush of all spaces prior to occupants entering the building. It is recommended to operate in occupied mode for a minimum of one week prior to students returning while assuring that outside air dampers are open.
- Daily air flush prior to occupancy: mechanical systems should be operated in occupied mode for a minimum of two hours prior to occupants re-entering the building. Systems should be operating in occupied mode a minimum of two hours after occupants have left the building. The intent is to maximize the fresh air to the space. The system should not operate below its minimum percentage of outdoor air.
- Verify that P-traps on condensate drains are full.
- Monitor control system and devices for evidence of improper operation.
- Confirm that air handling units (AHU), roof-top units (RTU), and unit ventilators (UV) are bringing in outdoor air and that outdoor air dampers are open. Ensure fresh air intakes are located away from potential contaminants (e.g., parking lots, air exhausts).
- Verify that exhaust fans and exhaust systems are operating correctly.
- Ensure airflow patterns in classrooms are adjusted to minimize occupant exposure to particles (i.e., no strong fans or diffusers blowing directly at occupants).
- Weather permitting, open windows in classrooms to increase air dilution in the space.
- Implement and continue regular equipment maintenance. Refer to equipment and system-specific checks and verifications listed by [ASHRAE](#) (pages 10–16).