



## Public Services and Procurement Canada (PSPC) Heating Ventilation and Air Conditioning (HVAC) Minimum Requirements – (COVID-19) April 22, 2020

Public Services and Procurement Canada (PSPC) is committed to providing our building occupants with productive and healthy work environments.

During the current COVID-19 pandemic, PSPC continues to ensure that building systems including Heating Ventilation and Air Conditioning (HVAC) systems are properly operated and maintained to ensure healthy work environments. In addition, if a suspected or confirmed case of COVID-19 is reported in one of our assets, PSPC or our provider will work with the employer to design and implement an appropriate cleaning and disinfection plan.

It is important to note that human coronaviruses cause infections of the nose, throat and lungs. They are most commonly spread from an infected person through:

- respiratory droplets that are spread when you cough or sneeze
- close personal contact, such as touching or shaking hands
- touching something with the virus on it, then touching your mouth, nose or eyes before washing your hands

**These viruses are not known to spread through ventilation or water systems.**

For more information, please consult the Public Health Agency of Canada (PHAC) [About Coronavirus infographic](#), which includes information on the best ways to prevent the spread of infections. (eg. hygiene and social distancing)

For more information, you can also visit the Government of Canada's [Coronavirus Disease \(COVID-19\)](#) website.

The following requirements have been established by Technical Services Service Line and the Property Facility Management Service Line part of PSPC Real Property Services in consultation with Health Canada to address risks to building HVAC systems. These requirements, which apply to PSPC crown-owned buildings will be reviewed and updated as required. For leases, it is required to have a discussion with the landlord to ensure that similar measures are being implemented prior to re-occupancy of leased spaces.

## Communications Requirements

Note that in order for PSPC to successfully complete the required actions to meet the minimum requirements prior to re-occupancy and to assist clients in their employer role; it is important that client departments provide sufficient advance notice of their intention to re-occupy a space that they have vacated. The amount of advance notice required will depend on a variety of factors (eg. regional capacity, localized demand, remoteness of buildings). Communication is key to the success of re-occupancy, it is therefore important that clients be informed ahead of time of the planned actions and testing. It is equally important that the client departments be informed of actions completed and of the testing results (eg. *Legionella*)

## Minimum Requirements for HVAC systems

### For buildings with reduced occupancy or full occupancy

In addition to completion of mandated and lifecycle maintenance of HVAC equipment it is recommended to provide enhanced indoor environmental quality in occupied spaces to promote occupant wellness while public health agencies have declared an epidemic of COVID-19. The following minimum operational changes to HVAC system(s) for ventilation, filtration and humidity are recommended to support enhanced indoor environmental quality.

#### Ventilation:

Operate HVAC systems at a higher fraction of outdoor air up to the maximum rate that can be sustained by the building systems. This may require modifications to building systems such as:

- The outdoor air damper position,
- Demand controlled ventilation systems (e.g. CO<sub>2</sub> sensors), where present.
- Exhaust fans, to ensure proper building pressurization.

Consider operating HVAC systems servicing occupied areas 24 hours a day, 7 days a week to enhance building airflow.

#### Filtration:

Ensure that the highest level of filtration that the HVAC system is intended to use is installed. It is important that filters in HVAC systems be replaced when they reach the end of their useful life and checked, on their regular schedule, to ensure that they properly fit in the filter racks and have their edges sealed to limit airflow bypass.

#### Humidity:

Maintain humidity levels within the limits prescribed in [PSPC MD-15000 Mechanical Environmental Standard for Federal Office Buildings](#). Maintain a minimum of 25% relative humidity in occupied spaces. Where buildings systems allow, consider operating building humidification systems serving occupied spaces at a higher relative humidity level to enhance occupant wellness but not to exceed 60% relative humidity. **CAUTION:** Do not operate at a relative humidity setpoint that will cause condensation on a building envelope component or other element in the building if it is not designed to manage the condensation.

### Heat/Energy Recovery:

Bypass or shut down heat/energy recovery ventilation systems that may leak potentially contaminated exhaust air (eg. Washrooms) back into the outdoor air supply.

### Cooling towers:

The resulting reduced building occupancy may impact cooling needs in buildings and cause cooling towers to remain idle more frequently. It is important to consider this reduced occupancy when making a decision to start cooling towers. It is imperative that water is not allowed to sit stagnant for prolonged periods. Recall that the [PSPC standard MD-15161 Control of Legionella in mechanical systems](#) (3.3.3) requires a system that does not operate for 3 days to be shut-down and drained. As such, it is important that operational cooling towers ensure water continues to circulate regularly through all components, water treatment system remain operational and validation testing (chemical and bacterial) be completed.

### **For buildings with no regular occupancy**

While a building is unoccupied, in addition to completion of mandated and lifecycle maintenance of HVAC equipment the building's HVAC system(s) should operate in unoccupied/weekend set-back modes for outdoor airflow, temperature and humidity setpoints. However, it is recommended that the HVAC system(s) be operated at the occupied setpoints for outdoor airflow, temperature and humidity for at least a 12 hour period once a week to support the continued functionality of building systems.

The same cooling tower requirements from above apply to buildings with no occupancy.

Prior to re-occupancy, the building should be flushed with the maximum amount of outdoor air for at least 24 hours while maintaining temperature and humidity setpoints

## **Key Contacts**

Please consult with your regional technical center of expertise for support implementing these requirements.

Technical enquiries related to this document should be directed to Senior Director Environment, Health and Safety, Technical Services Service Line, Real Property Services.

Facility Management enquiries related to this document should be directed to Senior Director Property and Facility Management Services Directorate, Property Facility Management Service Line, Real Property Services.