



Mechanical Contractors Association of Canada

BUILDING SMARTER TOGETHER

COVID-19

GUIDELINES FOR THE MECHANICAL CONTRACTING SECTOR

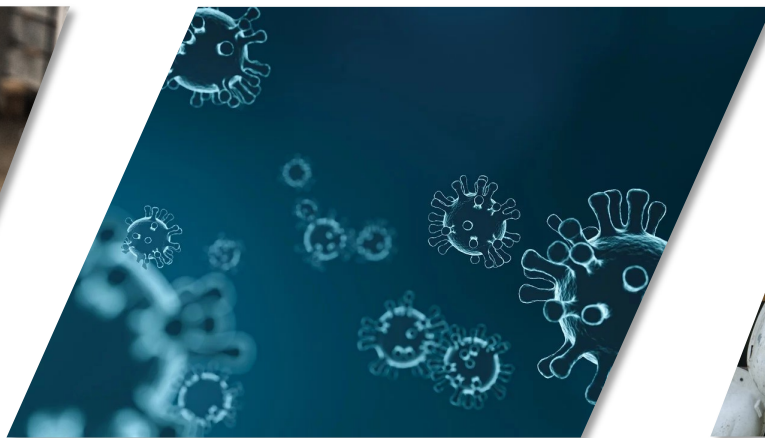


TABLE OF CONTENTS

Objectives.....2

Limitations.....2

Background.....3

General Guidance.....5

Guidelines for Worksite Safety.....9

Guidance for PPE and Hygiene /
Decontamination.....10

References.....15

This Guidance Document outlines the recommended best practices for mechanical contractors to maintain the health and safety of their workers, and other individuals who may be impacted by their work, while performing their necessary duties during the current SARS-CoV-2/COVID-19 pandemic.

The Canadian mechanical contracting industry provides construction and service for the Canada built environment, including plumbing, effluent, gas, ventilation, refrigeration, heating and cooling systems, for a wide variety of sectors, such as heavy industrial, industrial, health care, commercial, institutional and residential settings. Mechanical contracting plays a vital role in maintaining the health of the Canadian economy, as well as a critical role in supporting and assisting the continued effective operation of our healthcare systems and other essential services.

It is imperative that every mechanical contractor undertake any and all available precautionary measures to prevent community transmission of the virus and to ensure consistent, safe and effective work.



This Guide was developed in consultation with experts at OHS Global Risk Solutions | www.ohsglobal.com

Copyright 2020 | Mechanical Contractors Association of Canada | All Rights Reserved

701-280 Albert Street | Ottawa ON | K1P 5G8 | www.mcac.ca

OBJECTIVES

The objectives of this Guidance Document are as follows:

- Prioritize the health and safety of workers, other individuals, and the surrounding communities.
- Assist stakeholders with recommended best practices from federal, provincial and municipal health authorities.
- Establish and maintain a robust SARS-CoV-2/COVID-19 work plan across multiple facilities.
- Promote and foster a healthy and safe work environment for all involved individuals.

LIMITATIONS

The information contained in this document is:

- Intended for guidance only.
- Based on the prevailing, available information as of the date of this publication.
- Subject to, and mandatorily superseded by, any official government or public health orders or directives.
- Subject to change on an as-required basis.

The situation related to SARS-CoV-2/COVID-19 is changing rapidly. This Guidance Document will be updated on an as-required basis to reflect the latest broadly adopted measures.

This guideline shall not be used in place of regulatory required safety documentation.

Each individual contractor who continues their business activities during the COVID-19 pandemic must develop (internally or in conjunction with an external Qualified Person) their own regulatory-required safety documentation, per prevailing, applicable legislation, regulations, codes and/or other related laws specific to their geographic location/area of operation, and per the recommendations of this Guidance Document and any other applicable, industry-accepted standards and best practices.

Depending on the geographic region in which you operate, you may be required to have the following regulatory required documentation:

Exposure Control Plan.

Risk Assessments.

Safe Work/Decontamination Procedures.

Other related Programs and Plans (e.g. PPE, WHMIS, Lockout/Tagout, Working Alone/In Isolation).

Contractors must refer to their specific occupational health and safety regulations/codes for specific regulatory requirements. Please note that this Guide provides information based on best practices outlined from the Public Health Agency of Canada, the Centre for Disease Control and Prevention, the World Health Organization. This Guide was assembled and provided by OHS Global Risk Solutions to assist MCAC and its contractors to develop their own safety policies and procedures to deal with the COVID-19 issue, and does not supersede any guidelines, protocols or best practices implemented by any level of government.

NOTE: A Qualified Person is someone who is knowledgeable of the work, the hazards/risks involved, and the means to control the hazards/risks, by reason of education, training, instruction, knowledge, experience, skills, and competencies.

Qualified persons, for the purposes of COVID-19, must have infection prevention and control education and experience, amongst other fields of expertise.

BACKGROUND

BASIC VIRUS FACTS

- SARS-CoV-2 (“Severe Acute Respiratory Syndrome-Coronavirus-2”) is the virus itself which causes disease (COVID-19).
- COVID-19 (Coronavirus Disease-2019) is the name of the disease.
- SARS-CoV-2 is part of the large family of coronaviruses, which are common and widespread in human and animal populations.
- Most human coronaviruses cause mild, cold-like symptoms.
- Some, like SARS or MERS (Middle East Respiratory Syndrome), can cause serious or fatal illness.
- Unlike other microorganisms (e.g. bacteria, mould/fungi) viruses cannot multiply or reproduce outside of their host (i.e. an infected person).

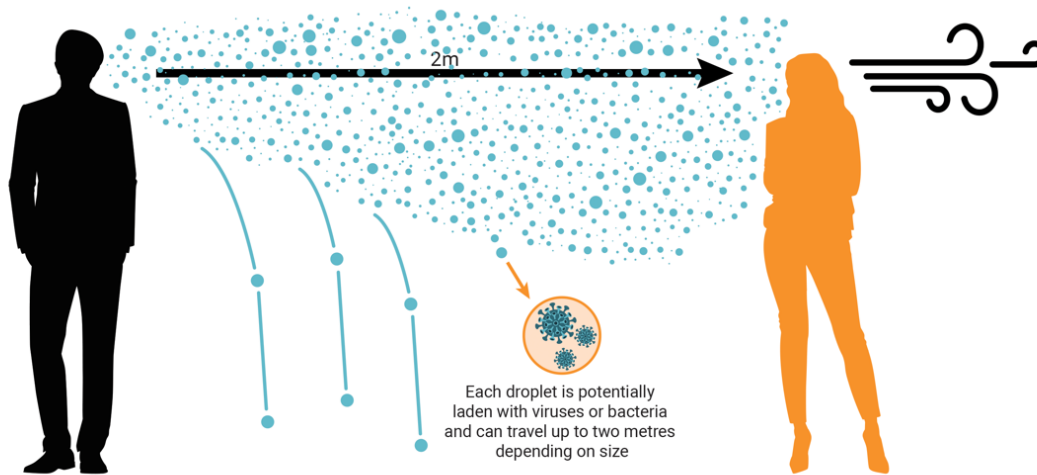
HOW IS THE VIRUS SPREAD?

Source: [Public Health Agency of Canada](https://www.canada.ca/en/public-health/services/diseases/2019-nCoV.html)

When an infected person coughs, sneezes, exhales, or touches their face, droplets laden with the virus are released.

These droplets may be:

- Inhaled directly into the respiratory tract if you are in close proximity (within ~2-3 metres (6-10 feet) or less).
- Transferred to you by direct contact (shaking hands, etc.).
- Transferred to you by indirect contact, when you touch a surface the droplets have settled on, and then touch your eyes, nose or mouth.



© Copyright Infection Control Training Group Ltd. All rights reserved.

The virus can persist on select surfaces for up to several days, depending on the type of surface and the ambient conditions.

There is evidence that the virus can be shed in human waste products, so assume all sanitary drains and sewage systems are contaminated with the virus for the duration of the pandemic.

WHAT ARE THE SYMPTOMS?

Sources: [World Health Organization](#), [Public Health Agency of Canada](#)

Infected individuals may not have obvious symptoms; mild cases may appear similar to a cold or flu.

Symptoms may take up to 14 days to appear after initial exposure to the virus.

Main symptoms of COVID-19 include:

- Fever.
- Tiredness.
- Dry cough.
- Shortness of breath and/or breathing difficulties.
- Pneumonia in both lungs.

Anyone can contract COVID-19, and potentially, develop serious or life-threatening symptoms; the risk to Canadians has been upgraded to “high.”

COVID-19 SYMPTOMS MAY DEVELOP WITHIN 14 DAYS OF EXPOSURE AND INCLUDE*:



Cough



Fever



Shortness of breath

Courtesy of [Johns Hopkins University & Medicine](#)

GENERAL GUIDANCE

GENERAL GUIDANCE FOR BUSINESSES

To ensure that mechanical contractors can continue to operate safely and effectively during this pandemic, proper planning, implementation and monitoring of effective policies and protocols is critical.

The following guidelines are recommended:

Manage perceptions (and potential misperceptions):

- Provide and share only confirmed, vetted facts, information and data.
- Communicate implemented preventative and precautionary measures with all stakeholders, including but not limited to:
 - Subtrades.
 - General contractors.
 - Customers.
 - Employees.
- Communicate via clear, simple and straightforward messages; ensure proper risk messaging and accuracy of provided facts, information and data.
- Update stakeholders regularly and as needed, as your work circumstances change.

Implement effective, written safe work policies, including but not limited to:

- Working from home (teleworking):
- Ensure employees can effectively do their work remotely.

Social/physical distancing:

- Cancel all in-person meetings, conduct via phone or video conference.
- Enforce physical distancing (minimum 2-3 metres/6-10 feet) for all employees where practically possible.
- If not possible, ensure appropriate PPE (refer to ***Guidance for PPE and Hygiene/Decontamination below***) is worn amongst coworkers while in close proximity, and based on the type of work and working conditions as outlined in your own contractor-developed regulatory-required safety documentation.

Cleaning/disinfection:

- Provide employees with hand sanitizing solutions, hand washing stations, and required PPE.
- Provide instructions and training on proper hand-washing and hygiene techniques, and ensure they are followed by everyone.
- Refer to [WHO instructions for proper hand washing/sanitizing technique](#).
- Frequently and properly clean and disinfect all high-touch surfaces, items (tables, phones, door handles, etc.).
- Ensure individuals responsible for cleaning/disinfecting are properly educated, trained, instructed and competent in proper methods, techniques, procedures, equipment and products.

Travel:

- Prohibit all non-essential business travel.
- Instruct any employee returning from travel outside Canada (or inter-provincially if applicable) to self-isolate for 14 days, and to seek approval before returning to work (if unable to work from home).

Employee illnesses:

- Review, update as necessary, and clearly communicate employee sick leave policies.
- Ensure employees fully understand and know COVID-19 symptom information.
- Instruct and ensure employees to stay home if they feel unwell, and to promptly communicate their status to their supervisor or human resources department.
- If an employee starts to feel unwell or develops symptoms of COVID-19 while at work, they should immediately:
 - Decontaminate themselves.
 - Leave the workplace and go directly home.
 - Communicate their status, and who they were in contact with, to their supervisor.
 - Stay at home and self-isolate as directed.
 - If employees develop symptoms of COVID-19 specifically, instruct them to call 8-1-1 (or equivalent service for their geographic region), report their symptoms, and follow the instructions provided.
- Instruct employees who are self-isolating to remain at home and not return to work until they:
 - Have completed at least 14 days of isolation;
 - Take a COVID-19 detection test for which the result is negative (if required by their municipal or provincial health authority); and
 - Receive written medical clearance that they can safely return to work.
- Develop comprehensive, detailed, robust, written infection prevention and control plans, programs, and

procedures that address:

- Your specific working environments.
- Prevailing safety regulations and standards for your geographical area(s) of operation.
- Potential interactions with your customers/clients.
- Proper PPE selection, inspection, use, care and maintenance.
- Proper decontamination and personal hygiene standards, requirements and protocols.

GENERAL GUIDANCE FOR EMPLOYEES

All individuals should adhere to the following general precautions at all times, both during work activities and outside work:

- Check the following websites regularly for updated information and directives:
 - [Public Health Agency of Canada](#).
 - [IPAC Canada](#).
 - Other trusted government sources (i.e. provincial health agencies and centres for disease control).
- Maintain physical (“social”) distancing protocols:
 - Remain a minimum of 2-3 metres (6-10 feet) from other people as much as practically possible.
 - If unable to maintain distancing, wear appropriate PPE based on the type of work and working conditions, and as outlined in your own contractor-developed regulatory-required safety documentation (refer to **Guidance for PPE and Hygiene/Decontamination** below), while in close proximity to other individuals.
 - Avoid physical contact with other people – no handshakes, fist or elbow bumps, etc.
 - Remain at home except for required work; telework where possible.
 - When performing site work, avoid crowded/public areas.
- Maintain hand hygiene and droplet control:
 - Wash hands frequently, and thoroughly for at least 20 seconds, with soap and water.
 - After coughing, sneezing, blowing nose or using the washroom.
 - Before eating, drinking, or touching face.
 - Use “approved” hand sanitizer or disinfectant wipes if soap and water are not available.
 - When coughing or sneezing, cover mouth and nose with tissue, or cough/sneeze into elbow.
 - Avoid touching face with unwashed hands or contaminated clothing/PPE.
 - Minimize unnecessary contact with items, surfaces when at work, especially high-touch surfaces (e.g. door handles, elevator call buttons, handrails, guard rails, countertops, etc.).
- Where possible, do not share tools, equipment, phones, pens, etc.
 - Where items must be shared, thoroughly and properly clean/disinfect prior to sharing, use.
 - Items should be cleaned/disinfected each time they are passed to a different person.
- Self-monitor for any symptoms, however minor.
- If you develop symptoms consistent with COVID-19, you should:
 - Promptly contact (remotely, i.e. phone, video/web consult, email etc.) your medical provider (e.g. physician) or Provincial Health Agency (call 8-1-1).
 - Inform supervisor and/or human resources department of your status, and who you may have come into

contact with.

- Do not enter into any walk-in clinic or healthcare facility (e.g. hospital), in order to minimize potential spread.



Wash your hands frequently and thoroughly, using soap and water for at least 20 seconds. Use alcohol-based hand sanitizer if soap and water aren't available.



Cough or sneeze into a tissue or flexed elbow, then throw the tissue in the trash.



Avoid touching your eyes, nose or mouth with unwashed hands.



Avoid close contact with people who are sick, sneezing or coughing.



Stay home when you are ill.



Clean and disinfect surfaces and objects that people frequently touch.

Courtesy of [Johns Hopkins University & Medicine](https://www.hopkinsmedicine.org/)

REDUCE THE SPREAD OF COVID-19. WASH YOUR HANDS.



1

Wet hands with warm water



2

Apply soap



3

For at least 20 seconds, make sure to wash:



4

Rinse well



5

Dry hands well with paper towel



6

Turn off tap using paper towel



palm and back of each hand



between fingers



under nails



thumbs

1-833-784-4397

@canada.ca/coronavirus



Public Health
Agence de la santé
publique du Canada

Canada

Courtesy of [Public Health Agency of Canada](https://www.canada.ca/en/public-health/)

GUIDELINES FOR WORKSITE SAFETY

BEFORE WORKING

It is critical to have a full understanding and comprehension of the hazards and risks at worksites at all times. This is especially important during the current pandemic, and the risks regarding SARS-CoV-2/COVID-19 must be anticipated, identified, determined and considered prior to deploying to any location to perform any mechanical contracting work.

Contractors should ask their clients multiple questions, such as but not limited to the following, prior to deploying to any worksite:

- Are there any individuals with presumed or confirmed COVID-19 present?
- Have there been any suspected or confirmed exposures to COVID-19 cases at the site?
- Where are/were these individuals in the building, and what measures were undertaken, or are being undertaken, regarding isolation, cleaning/disinfection, etc.?
- Where is the mechanical work to be performed in relation to these areas?
- Do you have any specific requirements, policies or protocols for contractors at this site, and if so, what are they?

Before starting work, workers (and/or employers) should conduct a risk assessment that considers the following factors:

- **WHERE** am I working?
 - Workplace, building, facility, premises
- **WHEN** do I need to work?
 - Regular day, night, weekends?
- **WHO** are the occupants?
 - Type(s) of occupants. Still present? Could be present? Could enter and be present?
- **WHAT** are the COVID-19 hazards/risks?
 - Anyone potentially infected with COVID-19?
- **WHAT** am I doing, need to do?
 - Clean/disinfect, perform my “regular” job.
- **HOW** will I do my work?
 - Means, methods, techniques, procedures, protocols.
- **WHAT** additional measures do I need to do my work safely?
 - Protective tools, equipment, materials.
- **HOW** will I decontaminate myself, others?
 - Means, methods, techniques, procedures, protocols.
 - Protective tools, equipment, materials.

WHILE WORKING

All employees (managers, supervisors, workers, and others) should be educated, trained, and instructed in, and follow, the below practices at all times while performing site work.

- **Verify/confirm** site conditions, client-specific protocols, and work requirements before deploying.
- **Ensure** their employer has properly trained and instructed them on the correct inspection, use, care and maintenance of all assigned PPE.
- **Conduct** a pre-job hazard/infection control risk assessment prior to starting work, and consider all aspects of the required work, including potential infection risks.
- **Conduct** a safety/planning meeting prior to starting work (while maintaining physical distancing).
 - Ensure everyone knows what they need to do, where they need to do it, how to safely get to where they need to go in order to minimize the duration of potential exposures.
- Per your employer's (and/or the specific facility's) policy, **don all PPE before** entering site/building/facility).
- **Carry** on your person hand sanitizing solution, extra gloves, extra suits/coveralls, and a sealable waste disposal bag (for used PPE and cleaning/disinfection supplies) at all times.
- **Follow** all established policies regarding personal protective practices (physical distancing, hand hygiene, droplet control, minimizing contact).
- **Avoid** moving through, working in high-traffic or crowded public areas as much as practically possible.
 - Schedule any required movement through these areas for low-traffic periods (i.e. early or late in the day, or after business hours) where practically possible.
- **Do not share** tools, equipment, materials with other workers unless absolutely necessary.
 - Where items must be shared, thoroughly and properly clean/disinfect prior to sharing, use.
 - Items should be cleaned/disinfected each time they are passed to a different person.

GUIDANCE FOR PPE AND HYGIENE/DECONTAMINATION

PPE

Employers are required to provide their workers with appropriate PPE for their specific, assigned work and the identified hazards/risks. Employers are also required to provide proper education, training and instruction for their workers in the proper selection, inspection, use, care and maintenance of their assigned PPE.

It should be noted once again that contractors must develop their own internal regulatory-required safety documentation, and determine their own appropriate and necessary PPE based on the type of work/risk and the conditions under which the work will be done. PPE should be selected based on the exposure hazards/risks identified for the specific work location and work tasks/activities being performed.

NOTE: Where other safety hazards/risks have been identified (e.g. electrical, working at heights, etc.), select and implement required controls, PPE, and other precautionary measures to mitigate those specific hazards/risks. Ensure all selected and implemented measures, for all identified safety hazards/risks, are compatible and do result in additional, uncontrolled hazards/risks.

Safety Eyewear:

- Some form of safety eyewear should be worn at all times at the workplace, which achieves the following:
 - Protects the eyes from potential airborne droplets containing the virus (or other biological hazards).
 - Prevents or minimizes touching of the eyes and face with potentially contaminated hands, clothing or PPE.
- **NOTE:** While it is currently unclear whether it is possible to become infected by SARS-CoV-2 directly via exposure to the eyes and surrounding membranes, precautions should be taken to protect against this route of transmission as a *best practice*.
- Protects the eyes from other, potential physical and/or chemical hazards that may be present.
- Safety eyewear should be selected based on the exposure hazards/risks identified for the specific work location and work tasks/activities being performed; acceptable examples include (but are not limited to):
 - At minimum:
 - Safety glasses/goggles.
 - For hot work tasks (welding, torching, cutting, grinding etc.):
 - UV-filtered welding glasses, goggles, or helmet.
 - Where sustained (more than 30 seconds) close contact (less than 2 metres/6 feet) with co-workers or other individuals is required:
 - Full face protection (e.g. safety or welding glasses/goggles plus full-face shield, welding helmet, or full facepiece air-purifying respirator (APR)).
 - Where there is a risk of close contact with, or proximity to infected individuals (suspected or confirmed), sanitary materials, or HVAC-related airflows (positive or negative) to or from potentially contaminated areas:
 - Chemical goggles and/or full-face shield (or APR with full facepiece).
- Appropriate protective eyewear must be supplied to workers who wear glasses.

Respiratory Protection:

- Respiratory protection should be worn at all times while:
 - Working in a currently occupied, or recently (within the past 14 days) occupied building/facility.
 - Working on currently (or previously) operational HVAC or sanitary systems.
 - Working in close proximity (less than 2 metres/6 feet) to other individuals.
- Half facepiece elastomeric APR with P100 hard-case filters should be worn.
- **NOTE:** Supplies of N95 respirators are extremely limited, and urgently needed by frontline healthcare workers. Therefore, it is recommended, per industry-accepted practice, to use alternate respirators (i.e. reusable elastomeric) wherever practically possible.
- Full facepiece elastomeric APR, or powered APR (PAPR) (tight-fitting full facepiece, helmet, or hood-type) with P100 hard-case filters may also be used if available.
 - These respirator types cover the entire face, and would not require additional protective eyewear for protection from SARS-CoV-2 contaminated droplets.
- When selecting filters:
 - Only hard-case type filters should be used, to minimize waste of PPE stocks.
 - Hard-case filters can be cleaned/decontaminated (on their exterior surfaces), sealed, and safely stored for re-use.
 - Soft-type (“pancake”) filters and filtering facepiece (“dust mask”) respirators cannot be safely reused, due to potential cross-contamination while handling after use.

- P100-rated filters are preferred due to greater availability.
 - If P100 filters are not available, any particulate filter of at least N95 rating will also provide adequate protection from airborne droplets.
- Where other respiratory hazards may be present (e.g. ammonia, organic vapours etc.), a combination filter/cartridge, with a P100 particulate filter and a chemical adsorbent media appropriate to the specific hazard, should be used.
 - Please refer to specific manufacturer's guide for proper filter/cartridge selection; for example:
 - [North/Honeywell Cartridge and Filter Reference Chart](#)
 - [3M Cartridge and Filter Guide](#)
- Where other head/face protection (e.g. welding helmet, face shield etc.) may interfere with respirators, use appropriate accessories (e.g. "snorkel" attachment for respirator) to minimize interference.

Limb/Body Protection:

- Impermeable nitrile gloves (minimum 5-mil thickness).
 - 2 pairs of gloves should be worn, with the outer pair replaced frequently.
 - Use of doubled gloves limits the need for hand sanitization during work.
 - Outer gloves may be exchanged for work gloves (e.g. rubber, cut-resistant, leather welding gauntlets) for specific tasks.
- Impermeable suits (e.g. Tyvek® or similar).
 - Don/wear if there is a risk of close contact with or proximity to infected individuals, sanitary materials (e.g. sewage), or HVAC-related airflows (positive or negative) to or from potentially contaminated areas.
 - Non-impermeable suits may be acceptable in lower-risk areas, provided no infected individuals are present.
 - Ensure suits are FR-rated if conducting hot work tasks (e.g. welding, cutting, torching).
 - Alternatively, if required, fabric FR coveralls and hood may be worn over impermeable suits.
 - Coveralls should be removed, placed in a sealable bag, and laundered with regular detergent and hot water between each use (wear impermeable gloves when handling soiled clothing). [Public Health Agency of Canada—How to Care For Someone With COVID-19](#)
 - Ensure suits have hoodie where a risk of contaminated droplets, dust/debris falling onto head (e.g. from opened ceiling tile/hatch, HVAC duct interior, etc.) is identified.
- Footwear:
 - Laceless rubber boots for work regarding sanitary systems.
 - Regular safety boots with disposable booties for other areas.

Decontamination/Hygiene:

- Hand sanitizing solutions, cleaning/disinfectant products:
 - Minimum 70% alcohol, 0.5% to 5% hydrogen peroxide, or "approved" equivalent.

NOTE: Although select benzalkonium chloride-based products have been "approved" for use with, some research suggests they may be less consistently effective than alcohol- or hydrogen peroxide-based products.
- Only use products on listed in one of the following sources:
 - The Health Canada list of [Disinfectants for Use Against SARS-CoV-2 \(COVID-19\)](#).

- The US Environmental Protection Agency [List N: Disinfectants for Use Against SARS-CoV-2](#).
- Follow all manufacturer instructions regarding safety, instructions for use and application, and the specific product's contact or "dwell" time.
- Do not re-use wipes or cloths, discard immediately after each use.
- Certified HEPA vacuum:
 - Should be used:
 - Whenever working in a healthcare facility (HCF).
 - When available, when work may generate or disturb potentially contaminated dust/debris.
 - Should not be used:
 - To clean tools, equipment, materials, PPE after working on/with sanitary systems.
 - To clean or remove liquids, wet or damp debris.
 - HEPA vacuums should be DOP/POA performance leak tested and certified within the last 12 months.

GUIDELINES FOR DECONTAMINATION, PPE REMOVAL

- Clean tools/equipment:
 - If available, use certified HEPA vacuum to first remove any potentially contaminated dust or dry gross debris (if present) from all accessible parts of all tools/equipment.
 - Perform secondary decontamination/cleaning:
 - Use "approved" disinfectant wipes or cloths soaked in "approved" disinfectant solution to thoroughly clean all accessible parts/surfaces of all tools/equipment.
 - If HEPA vacuum not available to remove dust or dry gross debris, remove using wipes/wet cloths, then repeat cleaning/disinfection step with second set of wipes/wet cloths.
 - Observe electrical safety precautions for electrically powered equipment.
 - Where possible (e.g. hand tools), place items directly in bucket of disinfectant solution to soak for appropriate contact time.
- Decontaminate PPE:
 - If available, use certified HEPA vacuum to first remove any potentially contaminated dust or dry gross debris (if present) from suit (all potentially contaminated areas).
 - Remove any residual gross debris from clothing/PPE using "approved" disinfectant wipes or cloths soaked in "approved" disinfectant solution.
 - Alternatively, use misting bottle with approved disinfectant solution to mist PPE, and wipe with clean cloths.
 - Remove outer gloves using Universal Precautions.
 - Clean/disinfect all external surfaces of respirator with "approved" disinfectant wipe.
- When removing any PPE:
 - Follow ["Universal Precautions"](#), inside-out methods.
 - Assume all items are contaminated, specifically with biological agents.
 - Avoid touching external surfaces with exposed skin or clean PPE.
 - [Carefully turn gloves, suits inside-out when removing, in order to contain external surfaces and potential contaminants.](#)

NOTE: The techniques to properly and safely remove contaminated gloves is similar, but not the same as for suits. Ensure proper education, training and instruction in both methods is provided to all workers before using PPE.

- Discard all non-reusable consumables; do not attempt to re-use.

NOTE: Once donned/used, items are assumed to be contaminated.

- Place non-reusable consumables directly in sealable waste bag; do not place on any surface where cross-contamination may occur.
- Remove PPE, perform additional decontamination/hygiene in following order:
 - Remove outer gloves using Universal Precautions; keep inner gloves on.
 - Remove coveralls/suit, booties, using inside-out methods.
 - Remove inner gloves using Universal Precautions.
 - Wash/sanitize hands and other exposed body parts.
 - Clean/disinfect external surfaces of respirator, filters, protective eyewear.
 - Remove protective eyewear.
 - Cover external openings of filters with duct tape, remove respirator.
 - Re-wash/sanitize hands, and other exposed body parts.
 - Remove filters from respirator, ensure air intakes fully sealed, store in clean sealable bag.
 - Clean/disinfect interior and exterior of respirator (with separate disinfecting wipes) and store in separate (from filters) clean sealable bag.

REFERENCES

Public Health Agency of Canada 2020, *Coronavirus disease (COVID-19)*, viewed 31 March 2020, <<https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html>>.

World Health Organization 2020, *Coronavirus disease (COVID-19) Pandemic*, viewed 31 March 2020, <<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>>.

Centres for Disease Control and Prevention 2020, *Coronavirus (COVID-19)*, viewed 31 March 2020, <<https://www.cdc.gov/coronavirus/2019-ncov/index.html>>.

Johns Hopkins University & Medicine 2020, *Coronavirus Resource Center*, viewed 1 April 2020, <https://coronavirus.jhu.edu/?utm_source=jhu_properties&utm_medium=dig_link&utm_content=ow_jhuhompage&utm_campaign=jh20>

“Understanding Coronavirus Exposure for Plumbing Professionals,” PHCC article, International Association of Plumbing and Mechanical Officials (IAPMO), March 12, 2020.

“ASHRAE Position Document on Airborne Infectious Diseases,” American Society of Heating, Refrigerating and Air-Conditioning Engineers, January 19, 2014, reaffirmed February 5, 2020.