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## PPE in Non-Healthcare Workplaces During COVID-19

The COVID-19 pandemic has increased the need for Personal Protective Equipment (PPE) in the workplace. To protect against COVID-19 in non-health care workplaces PPE (when required for workers) includes a surgical or procedure mask in addition to eye protection (for example, face shield or goggles). This fact sheet is designed to assist organizations and the frontline worker understand the benefits and limitations of the various types of facial PPE so they can make informed decisions about selection.

### PPE Selection and Risk Assessments

Before PPE is selected, a risk assessment must be conducted for both the workplace and nature of work performed. This risk assessment will identify the controls required to minimize the risk of COVID-19 transmission to workers. A Hierarchy of Controls should be considered. The measures to reduce the risks of exposure should not rely solely on use of PPE. Controls at the Source (reducing the number of people in the workplace) and Along the Path (physical distancing, active screening, proper ventilation, plexiglass barriers, room capacity limits, staggered shifts) are always preferred to controls at the Worker such as PPE. For COVID-19 protection, a combination of controls at each stage will provide the highest degree of protection.

*See Appendix A for more details on the control measures that can be used along the Hierarchy to reduce the risk of COVID-19 transmission.*

The employer and workers must be aware that Public Health measures regarding the use of face coverings for the general public do not replace or negate an employer's obligation to provide appropriate protection for workers, which could include the use and maintenance of PPE. For more information about the use of face coverings in the workplace, refer to Appendix B.

Direction from Public Health are the requirements for public health promotion and protection. The Occupational Health and Safety Act and the associated regulations outline the minimum requirements to be met in the workplace.

Standards, Codes, and Guidance Notes are additional resources that can be used to verify minimum standards and best practices.

### Facial Protection as Personal Protective Equipment for COVID-19

When PPE is chosen as a control to reduce risk for transmission of COVID-19 to workers, it must be used alongside other control measures. PPE, when required for workers, includes a mask (surgical or procedure) in addition to eye protection (for example, face shield or goggles).

Face shields, goggles or safety glasses with side shields can be used as PPE to provide eye protection. However, they must be used in addition to masks which protect the mouth and nose of the wearer. Face shields should not be used as a substitute for mask.

Even with other controls in place, including adequate ventilation, physical distancing and source control masking, there may be situations where PPE must be provided by the employer in order to demonstrate compliance with their legal obligation "to take every precaution reasonable to protect workers" (*Occupational Health and Safety Act, s.25.2(h)*). In a workplace where a worker is within 2 meters of an unmasked person and there is no impenetrable barrier (plexi glass shield) separating them, the worker must wear PPE that includes, at a minimum, a surgical or procedure mask and eye protection (face shield, wrap around safety glasses or goggles). Cloth masks used for source control ([see](#)

## PPE in Non-Healthcare Workplaces During COVID-19

*Appendix B)* are not suitable for use as PPE.

To determine if, when and what type of PPE is needed, workplaces must conduct a risk assessment that identify and evaluate hazards in each situation, including existing controls and their effectiveness.

To identify risk of COVID 19 by your sector or occupation group, refer to Public Health Ontario - COVID-19 Workplace Resources (Non-Healthcare).

If it is determined that personal protective equipment is needed in a workplace, the following is also required:

- Workers must be trained on the care, use, and limitations of any PPE including donning and doffing procedures
- Organizations must procure PPE and make sure appropriate supply is available and accessible to workers when needed.
- The PPE should not introduce any new health or safety hazards such as getting caught in equipment or machinery or hindering visibility resulting in a workplace accident.

Front line personnel should continually assess the situation for changing dynamics and increasing potential risks to determine if the PPE being used is sufficient and appropriate for the situation at hand.

*For instances where there is a heightened or increase potential of exposure to COVID-19, a situational risk assessment should be conducted, and a suitable properly fit tested respirator (disposable N95 or better) may be required.*

### Face (Surgical or Procedure) Masks for Protection from COVID-19:

Surgical / procedure masks used as PPE must be manufactured based on national or international standards and tested to ensure they meet a standard of protection.

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*Reminder: PPE for workers includes a surgical or procedure mask in addition to eye protection (for example face shield or goggles)*

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Determining which type of mask to use as PPE should be based on the risk assessment results of the type of work performed by the worker.

- Non-medical grade procedure masks are manufactured and tested according to approved design standards (e.g., GB/T 32610-2016 or Regulation EU 2016 /425 (EN149 Standard)). These masks are appropriate for use in lower risk situations.
- All medical grade surgical/ procedure masks must meet specific international standards for Class I medical devices, such as ASTM F2100 - Standard Specification for Performance of Materials Used in Medical Face Masks.

In higher risk situations a fluid resistant medical grade surgical/procedure mask may be required. A face shield, when used in controlled situations, can protect the mask from external moisture/ large particle droplets such as splashes, sprays, spill or splatter.

Depending on the work performed, an ASTM International approved medical mask is appropriate for most activities that do not require a respirator. For details about the levels and protective factors of Medical masks, refer to table below.

### ASTM MASK STANDARDS

ASTM LEVEL 1	For general use, where there is no risk of aerosols, sprays or fluids
ASTM LEVEL 2	For low to moderate levels of aerosols, spray and/or fluids
ASTM LEVEL 3	For heavy levels of aerosols, spray and/or fluids

# PPE in Non-Healthcare Workplaces During COVID-19

## Tight Fitting (filtering face piece) Respirators

In high-risk situations such as where aerosol generating procedures are used, a respirator may be required in place of a face mask for protection from potential COVID-19 exposure.

Tight fitting respirators must be [NIOSH approved](#) and their use as PPE must comply with [CAN/CSA- Z94.4 Standards for Selection, Use, and Care of Respirators](#).

The CSA Standard sets out requirements for the selection, use, and care of respirators and for the administration of an effective respiratory protection program in the workplace. Its purpose is to protect respirator users from any known or potential respiratory hazards. Respirators come in various types depending on the application they are required for (see chart below). Tight fitting respirators are used for protection from airborne contaminants. For any respirator to be effective it must be properly fitted to the individual user following the [CAN/CSA- Z94.4 Standards for Selection, Use, and Care of Respirators](#) and the user must perform a seal check each time a respirator is worn. If a respirator of any type is not properly fit tested, it should not be used as PPE for protection against airborne contaminants. The most common respirator used for general protection from COVID-19 is a disposable N95 respirator.

required.

As more information is garnered about COVID-19, and its emerging variants, direction from Public Health may change PPE requirements and impact your services. It is important to regularly review Public Health Guidance provincially and regionally to ensure all workplace protective measures meet current standards. You can also connect with your PSHSA consultant for any Occupational Health and Safety support or updates

## Appendix A: Hierarchy of Control

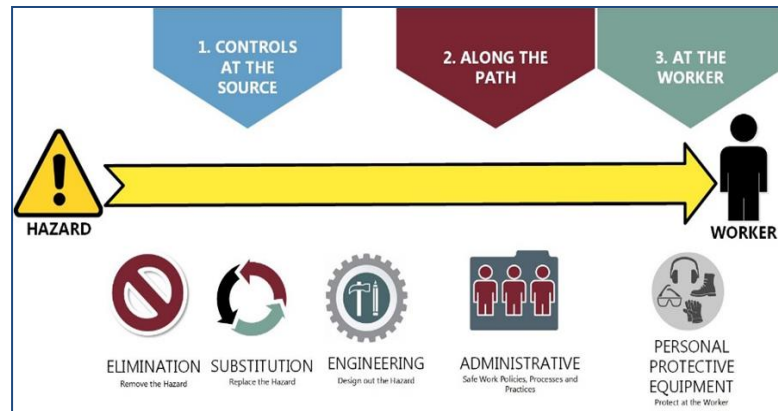


Figure 1-Hierarchy of Controls

## RESPIRATOR RATINGS

N-NOT OIL RESISTANT	95-Removes 95% of all particles that are at least 0.3 microns in diameter.
R- RESISTANT TO OIL	99-Removes 99% of all particles that are at least 0.3 microns in diameter.
P -OIL PROOF	100- Removes 99.97% of all particles that are 0.3 microns in diameter or larger, HE or HEPA quality filter.



Reusable full face or half face respirators with filters and cartridges may be used as respiratory protection for COVID-19 in place of disposable respirators. Unlike disposable respirators which only filter out air-based particulates, reusable respirators have a variety of cartridges that can filter out non-particulate hazards ranging from organic vapours to chlorine and tear gas.

*NOTE: Cartridge filters do not replace oxygen and should not be used in oxygen depleted atmospheres such as fires and some confined spaces. For these environments an SCBA (Self-contained breathing apparatus) would be*

This table explains the hierarchy of controls in more detail, starting at the source with the most effective control – elimination

<p>ELIMINATION Remove the Hazard</p>	<p>Elimination is the preferred control as it is the most effective. The hazard or risk of exposure is removed from the workplace. This is a control at the source. <i>Examples include workers staying at home, as well as restricting non-essential visitors and activities.</i></p>
<p>SUBSTITUTION Replace the Hazard</p>	<p>Substitution means replacing a hazardous substance with something less hazardous (e.g., replacing 1 chemical with another). For an infectious disease such as COVID-19, this is not an option.</p>
<p>ENGINEERING Design out the Hazard</p>	<p>Engineering controls include physical changes in the workplace that separate the workers from the source of the hazard. <i>Examples include HVAC systems and impermeable barriers.</i></p>

## PPE in Non-Healthcare Workplaces During COVID-19

 <p><b>ADMINISTRATIVE</b> Safe Work Policies, Processes and Practices</p>	<p>Administrative controls change the way the work is done and include safe work policies and procedures. Administrative controls are located along the path between the source of the hazard and the worker. <i>Examples include work from home, virtual meetings, hand hygiene, enhanced cleaning and disinfection, cohorting teams and physical distancing.</i></p>
 <p><b>PERSONAL PROTECTIVE EQUIPMENT</b> Protect at the Worker</p>	<p>This is equipment and clothing worn by a worker to minimize exposure to hazards and prevent illnesses and infection. PPE is used to protect the wearer and can include such things as surgical/procedure masks and eye protection. Correct use of PPE can help prevent some exposures, but it should not take the place of other control measures, for example, screening, hand hygiene, use of barriers and physical distancing where possible. PPE must be used alongside other control measures already in place. <i>PPE is classified as a control at the worker. PPE should be provided when a 2m/6ft distance cannot be maintained and a physical barrier is not present.</i></p>

In the work environment, face coverings are most appropriate in controlled workplaces where there is no public access to a worker and workers can maintain at least a 2-meter distance from ALL persons. They should be used in conjunction with physical distancing and other controls such as appropriate ventilation, active screening practices, physical distancing measures, engineering controls (physical barriers) and administrative controls (occupancy limits in rooms and staggered shifts etc.).

### SUGGESTED GUIDELINES FOR FACE COVERINGS

<https://www.ontario.ca/page/face-coverings-and-face-masks>

- fit securely to the head with string ties or ear loops
- maintain their shape after washing and drying
- be made of at least two layers of tightly woven material (such as cotton or linen)
- be large enough to cover the nose and mouth completely and comfortably without gaping

## Appendix C: References and Resources

- [Using Masks in the Workplace, Ontario.ca](https://www.ontario.ca/page/using-masks-in-the-workplace)
- [COVID-19 medical masks and respirators: Information for health professionals - Canada.ca](https://www.ontario.ca/page/covid-19-medical-masks-and-respirators-information-for-health-professionals)
- [Supplies of some types of personal protection equipment](https://www.ontario.ca/page/supplies-of-some-types-of-personal-protection-equipment)
- [COVID-19 Workplace Resources](https://www.ontario.ca/page/covid-19-workplace-resources)
- [Public Health Ontario - COVID-19 Workplace Resources \(Non-Healthcare\)](https://www.ontario.ca/page/public-health-ontario-covid-19-workplace-resources-non-healthcare)

## Appendix B: Face Coverings

Face coverings are generally made of cloth and may be referred to as universal mask wearing. They are used as *source control* during widespread outbreaks of illness such as a pandemic. Wearing a mask as a source controls is intended to prevent the spread of infection by limiting the number of respiratory droplets from the wearer entering the environment. They protect the persons around the wearer. In some provinces or public health units, wearing a mask while indoors in a public place or a workplace is a mandatory minimum public health measure. Workplaces must monitor local and provincial regulations for the most current direction.

Using masks as source control involves having workers, visitors and clients in the workplace wear a mask to protect those around them. This reduces the risk of droplet transmission from a potentially infectious person.

Surgical or procedure masks can also be used as a source control device as they meet or exceed any current requirements for face coverings.

Face coverings should not be considered part of your workplace PPE when dealing with the public or in any heightened exposure risk to biological or chemical agents.