Respiratory viruses: selecting respirators and masks

OHS information for employers

This bulletin gives employers information to help guide their selection of respirators and masks to minimize exposures to respiratory viruses. It focuses on specific occupational health and safety requirements related to respirators and masks as controls for respiratory viruses.

KEY INFORMATION

- Employers must conduct work site hazard assessments, and eliminate or control all known or potential hazards.
- The Occupational Health and Safety Code sets out the rules for hazard assessment and where applicable, for personal protective equipment in the workplace.
- Public health guidance may require the use of respirators, medical or non-medical masks in certain settings.

Assessing respiratory dangers

As an employer, you must conduct a hazard assessment for all known or potential hazards at the work site, including those related to respiratory viruses. If your hazard assessment determines that you need personal protective equipment – either on its own, or in combination with engineering or administrative controls – to adequately protect your workers from a respiratory virus, your next step is to determine if you need respiratory protective equipment, medical masks or non-medical masks.

Respiratory protective equipment is a type of personal protective equipment that protects workers from inhaling harmful substances. Section 244 of the Occupational Health and Safety Code sets out the factors you must consider to determine if you need respiratory protective equipment. These include the nature and exposure circumstances of any contaminants or biohazardous material, and the duration or likely duration of the worker's exposure.

For more information on personal protective equipment commonly used as respiratory virus controls, see Table 1. For more on respiratory virus hazard assessment and control, read Respiratory viruses and the workplace.

Respiratory protective equipment

Respirators – another term for respiratory protective equipment – can protect the wearer from inhaling airborne harmful substances, if they are properly worn and fit-tested. There are many types and designs of respirators, to serve a range of purposes.

To use a respirator at a work site, you must meet applicable requirements from Part 18 of the Occupational Health and Safety Code. For more on these, read Respiratory protective equipment: An employer's guide.

Part 18 requirements include ensuring your respirator is NIOSH-approved. Check NIOSH's certified equipment list to verify this.

If you want to use respiratory protective equipment approved by another organization at your work site, you must apply for and receive an approval from Alberta Occupational Health and Safety. Examples of alternative respirators that may qualify include:

- 95PFE respirators certified by the Canadian Standards Association (CSA).
- CA-N95 type respirators meeting the CSA standard Z94.4.1, *Performance of filtering respirators.*
- FFP2 respirators meeting the European Committee for Standardization (CEN), Standard (EN 49:2001+A1:2009).
- KN95 respirators meeting the National Standard of the People's Republic of China (GB2626-2006).
- KF 94 respirators (Korea 1st class respirators) meeting Korean Food and Drug Administration standards (KMOEL - 2017-64).

Medical masks

Surgical masks or procedure masks are types of medical masks. To work as intended, they need to fit well but don't depend on a tight facial seal. Unlike respirators, medical masks are loose fitting and do not require fit testing.

A well-fitted medical mask acts as a barrier that retains large droplets, expelled by the wearer through activities such as coughing, sneezing or talking. It provides protection in the work environment or to others nearby from the wearer's spit or mucus. It can also provide the wearer some protection against other peoples' respiratory droplets;

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however, because of the mask material and looser fit of the mask, this protection is limited.

When hazard assessments require the use of medical masks, the general personal protective equipment requirements in section 228 of the Occupational Health and Safety Code apply. The respiratory protective equipment requirements do not apply to medical masks.

USING A RESPIRATOR AS A SUBSTITUTE FOR A MEDICAL MASK

If your hazard assessment indicates you need medical masks – not respiratory protective equipment – to protect against respiratory viruses, you can use a respirator for protection as a substitute for a medical mask. In this case, section 228 of the Occupational Health and Safety Code will still apply but Part 18 respiratory protective equipment requirements will not.

Without passing a fit test, there is no guarantee that a respirator used as a substitute for a medical mask will prevent the wearer from inhaling airborne harmful substances. A respirator's ability to provide this type of protection depends on meeting respiratory protective equipment requirements in Part 18 of the Occupational Health and Safety Code.

Non-medical masks

If your hazard assessment determines that neither respirators nor medical masks are needed to protect against respiratory virus exposures, you may still require the use of a non-medical mask as part of your operational policies for keeping with recommended or required public health practices. Homemade or commercial cloth masks, or cloth masks with filter-type fabric layers, are examples of non-medical masks.

Non-medical masks are intended to reduce the spread of infection in the community. Using non-medical masks does not eliminate the need for applicable engineering or administrative controls (such as physical distancing practices, hand hygiene, proper respiratory etiquette or vaccination).

The Government of Alberta website has guidance about non-medical mask design and construction, as well as masks that are not recommended. These include neck gaiters, bandannas, masks with exhalation valves and plastic face shields. As shown in Table 1, approved plastic face shields can be used as supplementary personal protective equipment to protect a wearer's eyes, but not as a substitute for a mask.

Table 1: Overview: selecting respirators, masks and face shields for respiratory viruses

Type	Key features	How it protects	Examples of when to use
Respirator Example: N95, half-face respirator with P100 cartridges	• Must be NIOSH-approved (e.g. N95s). • Respirators that are not NIOSH-approved (e.g. KN95s) require an OHS approval. • Depend on a tight fitting face seal. • Must be fit-tested before use, to CSA Standard Z94.4-02. • Wearer should fit check every use. (Fit checks don't replace fit tests.) • Disposable (single use) or reusable.	• When properly fit-tested, worn, and used within their assigned protection factor, respirators filter airborne harmful substances (including viruses) from inhaled air.	• The hazard assessment determines the need for respiratory protective equipment. • Where other controls, e.g. engineering or administrative are not available, practical or sufficient. • When recommended or required by public health guidance. • When workers are performing specific high-risk medical procedures.
Medical mask Example: surgical masks, procedure masks	• Not considered respiratory protective equipment under the Occupational Health and Safety Code. • Commercially manufactured to American Society of Testing and Materials (ASTM) standards. • Loose fitting – no facial seal. • No fit test required. • Disposable (single use).	• Protects people around the wearer by providing a barrier that helps contain respiratory droplets exhaled by the wearer. • When worn properly, provides limited protection to the wearer from respiratory particles exhaled by others.	• The hazard assessment determines the need for medical masks i.e. respirators not required in these settings. • Where other controls, e.g. engineering or administrative are not available, practical or sufficient. • When recommended or required by public health guidance.
Non-medical masks Example: cloth masks, cloth masks with filter-type fabric layers	• Not considered respiratory or personal protective equipment under occupational health and safety laws. • May be commercially manufactured or homemade. • Materials, design and construction vary - no standardized requirements. • Loose fitting – no facial seal. • No fit test required. • Reusable options are available (must be properly washed). • Disposable types are also available.	• Gives some protection to people around the wearer by providing a barrier that helps contain respiratory droplets exhaled by the wearer.	• The hazard assessment indicates workers do not require a respirator or medical masks. • Where other controls, e.g. engineering or administrative are not available, practical or sufficient. • When recommended or required by public health guidance. • Employer policy mandating use of non-medical masks by customers or patrons.
Face shields Example: Transparent shields that are open at the top and bottom.	• Commercially manufactured. • Must meet Part 18 Occupational Health and Safety Code requirements when used as eye protection. • No facial seal. • Can be reusable or disposable.	• Protects the wearer's eyes from contact with large respiratory droplets or saliva. • Does not protect the wearer from inhaling smaller droplets or aerosols. • Does not protect people around the wearer.	• Not a substitute for respirators or masks. • Use approved face shields with a respirator or mask, when the hazard assessment determines the need (e.g. when physical distancing cannot be maintained and eye protection is required).

Contact us

OHS Contact Centre

Anywhere in Alberta

- 1-866-415-8690

Edmonton and surrounding area

- 780-415-8690

Deaf or hard of hearing (TTY)

- 1-800-232-7215 (Alberta)
- 780-427-9999 (Edmonton)

Notify OHS of health and safety concerns

alberta.ca/file-complaint-online.aspx

Call the OHS Contact Centre if you have concerns that involve immediate danger to a person on a work site.

Report a workplace incident to OHS

alberta.ca/ohs-complaints-incidents.aspx

Website

alberta.ca/ohs

Get copies of the OHS Act, Regulation and Code

Alberta Queen's Printer

qp.gov.ab.ca

OHS

alberta.ca/ohs-act-regulation-code.aspx

For more information

Applying for an OHS acceptance or approval (LI030)
ohs-pubstore.labour.alberta.ca/li030

NIOSH certified equipment list
cdc.gov/niosh/npptl/topics/respirators/cel/default.html

NIOSH filtering facepiece respirator labels (includes required markings)
cdc.gov/niosh/npptl/topics/respirators/disp_part/

Respiratory protective equipment: An employer's guide (PPE001)
ohs-pubstore.labour.alberta.ca/ppe001

Respiratory viruses and the workplace (BH022)
ohs-pubstore.labour.alberta.ca/bh022

United States CDC Factors to consider when purchasing respirators from another country
cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/international-respirator-purchase.html