NORTHWEST TERRITORIES & NUNAVUT

CODES OF PRACTICE

Personal Protective Equipment

HIGH-VISIBILITY APPAREL

WSCC Workers' Safety & Compensation Commission | ᐃᓕᓴᕆᔨᑦᓯᓂᖅ ᐊᑦᑕᓇᖅᑐᓂᒃ ᐊᒻᒪ ᓇᓗᓀᐅᔨᓂᐅᑉ ᖃᐅᔨᓴᖅᑎᑦ

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It is not a statement of the law.

If you would like this in another language, please contact us.

Foreword

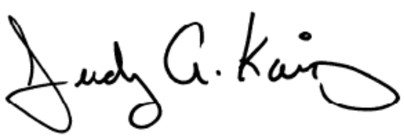
The Workers' Safety and Compensation Commission (WSCC) produced this industry Code of Practice in accordance with subsections 18(3) and 18(4) of the *Northwest Territories and Nunavut Safety Acts*.

The WSCC gratefully acknowledges the Canadian Centre for Occupational Health and Safety (CCOHS) for information used in the Personal Protective Equipment High-Visibility Apparel Code of Practice.

The Code of Practice applies to all workplaces covered by the *Northwest Territories and Nunavut Safety Acts* and *General Safety Regulations.* The Personal Protective Equipment High-Visibility Apparel Code relates to sections 4 and 5 of the *Northwest Territories and Nunavut Safety Acts,* and sections 38 and 40 of the *Northwest Territories and Nunavut Safety Regulations*.

Copies of this code are available online from the WSCC at: wscc.nt.ca or wscc.nu.ca.

The Personal Protective High-Visibility Apparel Code of Practice is effective May 31, 2013, as published in the *Northwest Territories Gazette* and the *Nunavut Gazette.*



Chief Safety Officer, WSCC

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WHAT IS A CODE OF PRACTICE?

A code of practice is a document written for everyday use that provides practical guidance for achieving the safety standard required by any provision of the *Northwest Territories and Nunavut Safety Acts* and *Regulations*.

As per section 18(3) of the Northwest Territories and Nunavut *Safety Acts, "For the purpose of providing practical guidance with respect to the requirements of any provision of this Act or the Regulations, the Chief Safety Officer may approve and issue such codes of practice as he or she considers are suitable for that purpose."*

The code comes into effect on the day stated in the notice of approval published in the *Northwest Territories* and the *Nunavut Government Gazettes*.

The approved code does not have the same legal force as the *Safety Acts* and *Regulations.* A person or company cannot be prosecuted for failing to comply with the code of practice. However, in proceedings under the *Safety Acts* and *Regulations*, failure to observe a code of practice may be considered to determine whether a person has complied with the *Safety Acts* and *Regulations*. Observing a code may also be accepted as evidence of compliance and safe practices.

An approved code of practice should be followed unless there is an alternative course of action that achieves the same or better standard of health and safety at the work site.

A Code of Practice

- Provides practical guidelines.
- Needs to be adapted to the work site.
- May be used as evidence.
- Should be followed unless there's a better way.

INTRODUCTION

This High-Visibility Apparel code of practice provides basic guidelines to ensure worker safety in the workplace through the use of personal protective equipment (PPE). Workers exposed to hazards such as moving roadway traffic or construction equipment must wear high-visibility safety apparel to protect them from hazards.

Definition

Personal Protective Equipment means clothing, a device or other article required to be worn or used by a worker to prevent injury.

Working near traffic and around construction exposes workers to considerable risk. PPE, such as high-visibility clothing, minimizes exposure to these occupational hazards. PPE cannot eliminate a hazard, but can reduce the risk of injury. High-visibility apparel make workers stand out from their background, differentiates wearers, and provides greater visibility during nighttime work.

REGULATORY REQUIREMENT

Northwest Territories and Nunavut

GENERAL SAFETY REGULATIONS

40. An employer shall ensure that a worker exposed to hazard from moving vehicles wears clothing made of or fitted with reflective, fluorescent or other highly visible materials unless equally effective means of protection are provided to and used by the worker.

Refer to CSA Standards:

Z96-09 High-Visibility Safety Apparel.

Z96.1-09 Guideline on Selection, Use, and Care of High-Visibility Safety Apparel.

PPE usage is specific to every work site and job hazard assessment.

CSA STANDARD

The Canadian Standards Association develops standards to address needs such as enhancing health and safety. To view CSA standards online see http://ohsviewaccess.csa.ca/

CSA Group test and certify products to Canadian standards and issue the CSA Mark for qualified products.

CAN/CSA-Z96-09

CAN/CSA	Stands for Canada and the Canadian Standards Association.
Z96	Lettering between CAN/CSA and the last two digits represent the internal CSA coding of the relevant standard. In this case the coding refers to the standard on **High-Visibility Safety Apparel.**
-09	The last two digits indicate the year issued.

Technological and research developments result in regular updates to standards. When the standard is updated, the end of the CSA reference changes. The new standard becomes the standard that applies.

Make sure you use the most up to date standard.

PPE AND HAZARD ASSESSMENT

The CSA Standard recommends that a hazard assessment be carried out on each job site to evaluate the workplace or work site for known or potential hazards a worker can encounter while performing a job or task. This assessment helps determine the risk to workers of being hit by moving vehicles and the environmental conditions under which work is performed.

When doing a hazard assessment where High-Visibility Safety Apparel (HVSA) might be required, be sure to consider:

- the type and nature of the work being carried out - including the tasks of both the HVSA wearer and any drivers,
- whether workers will be exposed to heat and/or flames (if so, flame-resistant HVSA would be required),
- work conditions, such as indoor or outdoor work, temperature, work rates, traffic flow, traffic volume, visibility, etc.,
- the workplace environment and the background workers must be seen in (e.g. is the visual area behind the workers simple, complex, urban, rural, highway, filled with equipment, cluttered),
- how long the worker is exposed to various traffic hazards, including traffic speeds,
- lighting conditions and how the natural light might be affected by changing weather (sunlight, overcast sky, fog, rain, or snow),
- factors that affect warning distances and times, such as the size of vehicles, their potential speeds, the ability to stop quickly, and surface conditions,
- if there are any engineering and administrative hazard controls already in place (e.g. barriers),
- any distractions that could draw workers attention away from hazards,
- the sightlines of vehicle operators, especially when vehicles are operated in reverse; and
- if certain jobs, or the function being done, need to be "visually" identifiable from other workers in the area.

Source: *High-Visibility Safety Apparel*, Canadian Centre for Occupational Health and Safety (CCOHS), http://www.ccohs.ca/oshanswers/prevention/ppe/high_visibility.html Reproduced with permission of CCOHS, 2013.

PPE AND HAZARD CONTROL

Decisions about PPE form part of the hazard assessment process, the standard work site approach to dealing with potential hazards. There are five basic ways to control hazards. These controls form a hierarchy. Elimination is always the first control to consider. Using PPE such as high-visibility apparel is the last line of defense against accidents by providing more warning to vehicle operators that workers are on foot in the area.

The five basic ways to control hazards and examples:

1. Elimination (remove from the work site)
2. Substitution (use a less harmful substance)
3. Engineering (isolate equipment/set barriers)
4. Administration (provide training/maintenance)
5. Personal Protective Equipment (provide high-visibility apparel)

The use of PPE does not prevent accidents or eliminate hazards. Make every effort to control all hazards at the source or use physical barriers and other engineering controls to reduce exposure of workers to moving vehicles. Training is also important. PPE cannot achieve its full-protection potential without worker knowledge and cooperation.

Several controls may have to be put in place. Certain hazards may require multiple PPE solutions. For example, working near machinery on the road could require a hard hat, ear muffs, goggles and high-visibility safety apparel.

Wearing PPE should not add to the hazard or create a new hazard. For instance, proper glove selection can prevent skin damage, but gloves worn while working with moving equipment can create an entanglement hazard. Using different types of protection at the same time i.e. hard hat, ear muffs and goggles, should not increase the risk to the worker.

PPE design criteria cannot cover all eventualities. Do not use PPE when its usage creates hazards greater than those for which it is designed. Take uncertainties into account when evaluating potential hazards.

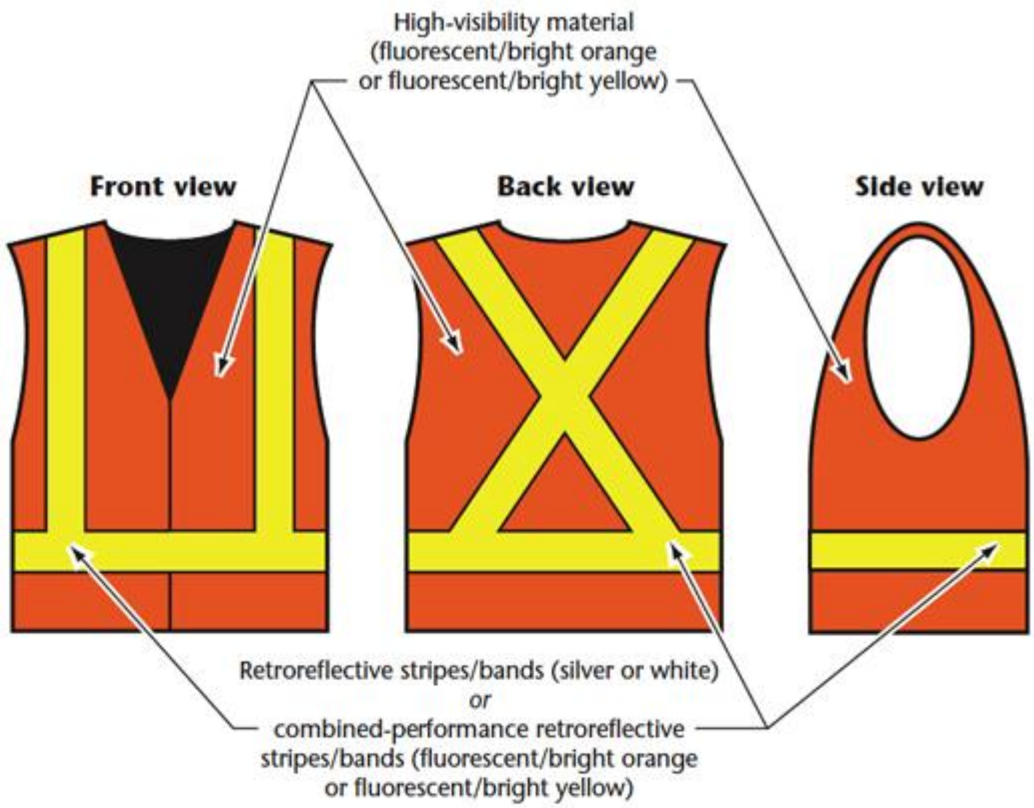
For more information see the PPE codes of practice, the Hazard Assessment code of practice and Traffic Control Person code of practice at wscc.nt.ca

GENERAL INFORMATION

What is High-Visibility Safety Apparel (HVSA)?

High-visibility safety apparel (HVSA) is clothing (e.g. vests, bibs or coveralls) that workers can wear to improve how well other people "see" them (their visibility). Most often, high-visibility clothing is worn to alert drivers and other vehicle operators of a worker's presence, especially in low light and dark conditions. High-visibility headwear can also be worn to increase the visibility of the wearer in situations where part or all of the wearer's body could be obscured (e.g., leaves/trees, traffic barriers, construction materials, etc.).

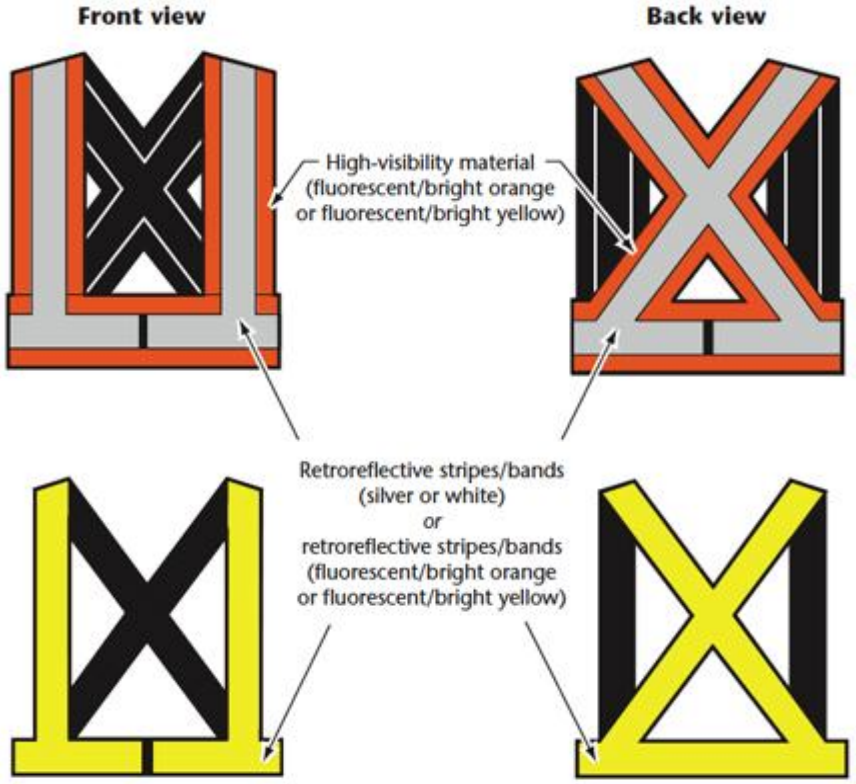
Requirements for high-visibility safety clothing for Canadian workers are found in the Canadian Standards Association (CSA) Standard Z96-09 "High-Visibility Safety Apparel" and in the related guideline "CSA Z96.1, Guideline on selection, use, and care of high-visibility safety apparel."



What is the difference between fluorescent and retroreflective materials?

Fluorescent material takes a portion of invisible ultraviolet light from sunlight, and through special pigments, sends it back to the viewer as more visible light. This material only functions where there is a source of natural sunlight. Fluorescent material will appear brighter than the same coloured non-fluorescent material, especially under low natural light (e.g., cloud cover, fog, dusk, dawn, etc.). This property offers daytime visibility enhancement not present with other colours. These materials enhance daytime visibility, especially at dawn and dusk. Fluorescent colours provide the greatest contrast against most backgrounds.

Retroreflective material is created to return light in the direction of the light's source. This property will let a driver see the light reflected from the retroreflective material on a person's garment (as long as the person is standing in the light's beam). Retroreflective materials are most effective under low-light level conditions. While retroreflective materials can still reflect in the daylight, there is little difference between the light reflected from the garment's material and the surrounding environment. This lack of contrast makes retroreflective materials ineffective for enhanced visibility during (sunny) daytime conditions.



Source: *High-Visibility Safety Apparel*, Canadian Centre for Occupational Health and Safety (CCOHS), http://www.ccohs.ca/oshanswers/prevention/ppe/high_visibility.html Reproduced with permission of CCOHS, 2013.

SELECTION

The CSA Standard Z96-09 High-visibility Safety Apparel sets out levels of retroreflective performance, the colours and luminosity of background materials, and how much of the body should be covered by the high-visibility components. There are also special requirements for garments that provide electrical flash and flame protection.

Classes

CSA lists three classes of garments based on body coverage provided. Each class covers the torso (waist to neck) and/or limbs according to the minimum body coverage areas specified for each class. For more details on the exact specifications, refer to the CSA Standard.

- Class 1 provides the lowest recognized coverage and good visibility.
- Class 2 provides moderate body coverage and superior visibility.
- Class 3 provides the greatest body coverage and visibility under poor light conditions and at great distance.

Selection Criteria

1. Coverage
2. Fit
3. Brightness
4. Colour
5. Design

1) Coverage

- Large, bright garments are more visible than small ones. Coverage all around the body (360° full body coverage) provides better visibility in all viewing directions.
- Stripes of colours that contrast (have a distinct colour difference) with the background material to provide good visibility. Stripes on the arms and legs can provide visual clues about the motion of the person wearing the garment.
- When background material is bright-coloured or fluorescent material, it is intended to be highly visible, but is not intended to provide retroreflective performance.
- Other requirements such as flame resistance, thermal performance, water resistance, durability, comfort, tear-away features, material breathability and flexibility that are applicable to the job.
- Employers should select the colour and stripe combination that provides the preferred contrast and visual indication of movement.

2) Fit

- For safety and best performance, garments should be fitted to the person. Don't forget to consider the bulk of clothing that might be worn underneath the garments, and how the garment should be worn (i.e., done up properly around the body with no loose or dangling components). The garments should sit correctly on your body and stay in place during your work.
- The apparel should be comfortable to wear. The parts of the apparel that come into direct contact with the worker should not be rough, have sharp edges, or projections that could cause excessive irritation or injuries. The apparel should also be lightweight.
- Garments should be selected and worn so that no other clothing or equipment covers the high-visibility materials (e.g., glove gauntlets, equipment belts, and high-cut boots).

3) Brightness

- **Daylight**: Bright colours are more visible than dull colours under daylight conditions (e.g. fluorescent materials are suitable for daylight).
- **Low light conditions**: Fluorescent colours are more effective than bright colours under low light (e.g. dawn and dusk). Under these conditions, reflective materials are also suggested.
- **Dark conditions/worksites** : Greater retroreflectivity provides greater visibility under low light conditions. Retroreflective materials provide high-visibility conditions and are preferred over bright colours. Fluorescent materials are ineffective at night and less visible than white fabrics.

4) Colour:

The CSA Z96-09 High-Visibility Safety Apparel Standard specifies three colours for background materials and contrasting-colour stripes to provide options that are intended to create visibility against most work environments. The stripes should be either retroreflective or combined-performance.

- **Background material:** should be fluorescent yellow-green, fluorescent orange-red or fluorescent red, or bright yellow-green, bright orange-red or bright red.
- **Combined-performance retroreflective material** (i.e. the stripes): should be fluorescent yellow-green, fluorescent orange-red or fluorescent red and must be in contrast (have a distinct colour difference) to the background material.

5) Design

To comply with the CSA Standard, the HVSA should meet the following criteria:

- Stripes/bands are to be in a distinctive, standardized pattern
  - a symmetric "X" on the back extending from the shoulders to the waist,
  - two vertical stripes on the front passing over the shoulders and down to the waist;
  - a waist-level horizontal stripe extending entirely around the back to the bottom of the vertical stripes on the front. This horizontal stripe may continue between the front vertical stripes (optional). For Class 3 apparel, stripes/bands encircling both arms and both legs are added.
- The stripes/bands are to be displayed in a way to ensure that some part of them is visible from all angles around the body (i.e., 360° visibility).
- For all classes, the total width of stripes/bands must be at least 50 mm (1.96") throughout. Stripes/bands near the bottom edge of a garment, sleeve or pant leg must be at least 50 mm (1.96") away from the edge.
- Stripes/bands may be made up entirely of combined-performance or retroreflective material.

> For more information on clothing for working outside see the Thermal Conditions code of practice or Traffic Control Person code of practice at wscc.nt.ca

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TRAINING AND MAINTENANCE

Training:

As with any personal protective equipment, workers should be given appropriate training in the use and care of the equipment. The following minimum information should be provided to workers wearing high-visibility apparel:

a) when to use the high-visibility apparel
b) fitting instructions, including how to put on and take off the apparel, if relevant
c) the importance of using the apparel only in the specified way
d) limitations of use
e) how to store and maintain the apparel correctly
f) how to check for wear and tear
g) how to clean or decontaminate the apparel correctly with complete washing and/or dry cleaning instructions.

Care/Maintenance:

Keep your high-visibility apparel clean and well-maintained. Contaminated or dirty retroreflective materials provide lower visibility.

Replace garments that show signs of wear and tear, soiling, or contamination as it will no longer be able to provide acceptable levels of visibility.

Purchasers of HVSA should get proof that the materials used and the design of the garment meet the requirements of the CSA Z96-09 Standard.

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Acknowledgments

The Workers' Safety and Compensation Commission (WSCC) of the Northwest Territories and Nunavut appreciate the participation of their stakeholders with Occupational Health and Safety developments.

If you have any questions or comments, please contact Prevention Services at 867-920-3820.

Related publications and the *Safety Act and Regulations* are also available on our websites:

wscc.nt.ca

wscc.nu.ca

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