

17 HIGH-VISIBILITY CLOTHING

Construction workers who work in high-traffic areas such as on busy roads or jobsites are at risk of being struck by moving vehicles. They need to stand out so that vehicle drivers and equipment operators can see them. That's why they are required by law to wear high-visibility clothing (Figure 17-1).



Figure 17-1: High-visibility Clothing Helps Equipment Operators See Workers

The Construction Projects regulation requires that any worker who may be endangered by vehicular traffic on a project must wear a garment that covers the upper body and provides a high level of visibility. The specifics of that garment can be found in section 69.1 of O. Reg. 213/91. For example, if the garment is a vest, it must have an adjustable fit and a side and front tear-away feature.

While workplaces must comply with the regulations, it's also acceptable to follow the CSA standard for this type of clothing. **CSA Z96-15—High-Visibility Safety Apparel** specifies how this type of clothing should reflect light, what colours can be used, and how much of it a person needs to wear. It also provides advice on the selection, use, and care of high-visibility safety material and recommendations for hazard assessments.

There are two main things to consider when choosing to high-visibility clothing:

1. **Background Material**
2. **Retroreflective Stripes or Bands.**

Background Material

This is the main material of the garment. According to the construction regulations, it must be fluorescent blaze or international orange in colour. Fluorescent blaze is also known as safety orange, which is used on road signs and hunting gear. International orange, on the other hand, has a darker, more reddish tone.

This background material gives drivers and equipment operators the best chance of seeing workers during the daytime. Fluorescent colours use more of the visible light spectrum than other colours. They absorb sunlight and reflect the energy back to us as visible light, which we see as a glow. Even on a cloudy day or at dusk or dawn, fluorescent colours will appear brighter. And because orange is a complementary colour to blue, it provides the best contrast against the colour of the sky and most other background colours.

Unlike the regulations, the CSA standard allows some background colours other than orange. These colours are accepted by the Ministry of Labour (MOL) as being in compliance.

Retroreflective Stripes or Bands

The retroreflective stripes or bands that are required on high-visibility clothing serve a similar purpose to the background material. They help increase worker visibility but are more effective at night or in low-light conditions. Retroreflective stripes reflect the light from oncoming headlights back to the driver or operator so that a worker can be seen in the dark.

According to the regulations, these stripes must be both retroreflective and fluorescent. The front and the back of the garment must have two yellow stripes that are 5 cm wide. The yellow area must be at least 500 cm² on the front and 570 cm² on the back. On the front, the two stripes must be vertical, centred, and approximately 225 mm apart (as measured from the centre of each stripe). On the back, they must be arranged in a diagonal "X" pattern.

For night-time work, additional stripes or bands are required on the arms and legs. One way to meet this requirement is to dress workers in fluorescent orange coveralls with retroreflective bands or stripes attached.



Risk Assessment

High-visibility clothing is a way to control hazards at the worker. As such, it should be the last option after considering engineering and administrative controls that control hazards at the source or along the path (e.g., putting up barriers between workers and vehicles).

If using PPE is the best option, assess the site-specific risks that need to be controlled before choosing the type of high-visibility clothing workers will require. Those who require greater visibility, such as roadway construction workers, should wear clothing that is highly visible under those particular work conditions.

CSA Z96-15—High-Visibility Safety Apparel also recommends conducting a risk assessment in order to evaluate the worksite for known or potential hazards that a worker may encounter while performing a job or task.

Under this type of assessment, it may be helpful to ask the following questions:

- What type of work is being done?
- Is it indoor or outdoor work?
- How much traffic are workers exposed to?
- Will workers be exposed to excessive heat, flame, or arc flashes?
- What lighting conditions might be a factor?
- What other controls are in place to protect workers?

Knowing the answers to these questions may help a company decide what kind of high-visibility clothing to buy in order to best meet their needs and protect their workers.

The CSA standard lists three classes of garments based on the amount of body coverage (i.e., torso (waist to neck) and/or limbs). As a minimum, IHSA recommends a class 2 garment with Level 1, 2, or FR retroreflective stripes.