



High-visibility clothing

You need to be **seen**
if you want to be **safe**

Those who work in high-traffic areas such as on busy roads or construction sites, near utility lines, and around loading docks or airport runways are at risk of being struck by moving vehicles.

Construction workers, roadworkers, utility workers, and transportation workers need to stand out so that drivers and equipment operators can see them. That's why they are required by law to wear high-visibility clothing.

The Construction Projects regulation states 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 the garment are found in section 69.1 of the regulation (213/91). For example, if the garment is a vest, it must be adjustable and have a side and front tear-away feature.

Although Ontario workplaces must comply with the regulations, following the CSA standard for this type of clothing can also be acceptable in some cases. An updated version of **CSA Z96-15—High-Visibility Safety Apparel** was released last year and can be a helpful resource. It 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.

Safety Orange

Background material

There are two main things to consider when buying high-visibility clothing—the background material and the bright “retroreflective” stripes or bands that are on it. According to the construction regulation, the main material of the garment 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 of blue, it provides the best contrast against the colour of the sky and many 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. As Michael Chappell, Provincial Co-ordinator of Construction Health and Safety for the MOL, explains, “We accept all background colours that are listed in the CSA standard in addition to those listed in the regulation. We will shortly be issuing a technical bulletin to stakeholders confirming this position.”

Retroreflective stripes or bands

Like the background material, the retroreflective stripes or bands that are required on high-visibility clothing help increase the visibility of workers. However, they 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



International Orange

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 nighttime work, additional retroreflective silver stripes or bands are required on each arm and leg.

Risk assessment

Before choosing high-visibility clothing, a needs analysis should be conducted to assess the risks that need to be controlled. Workers who require greater visibility, such as roadway construction workers, should wear clothing that is highly visible under their specific work conditions. The CSA standard 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.

How IHSA can help

IHSA's *Construction Health and Safety Manual* (M029) has a chapter devoted to high-visibility clothing. In addition, the ihsa.ca website has a **Traffic Control** topic page that explains the requirements for garments and gives some training recommendations and other information about high-visibility clothing.