High-Visibility Safety Apparel

For Public Employers and Employees In Massachusetts

Commonwealth of Massachusetts
Executive Office of Labor and Workforce Development
Department of Labor Standards

Introduction

Working near traffic and around construction equipment exposes millions of workers across the country to struck-by, runover and backover hazards. Workers who are at risk include highway construction and maintenance workers, survey crews, crossing guards, emergency incident responders, and police officers. Any worker exposed to the risks of moving roadway traffic or construction equipment must wear high-visibility safety apparel. The use of high-visibility safety apparel allows motorists and equipment operators to see workers distinctly, reducing the risk of worker fatality or injury.

What is High-Visibility Safety Apparel?

The purpose of high-visibility safety apparel is to make workers stand out from their background, to differentiate the wearer as a person, and to provide greater visibility during night time work. The workers should be visible when they are standing, walking, bending, squatting, and turning sideways. The worker should be identifiable as a person by a motorist approaching from the front, back or side. The worker should be visible during day and night work.

High-visibility apparel consists of a fluorescent-colored base as background material that is intended to be highly visible. The color of the background material can either be fluorescent yellow-green or fluorescent orange-red. The retroreflective material is the band of material placed over the background, intended to reflect light back to the source when light shines on the apparel.

How do I choose the correct apparel?

There are two standards that apply to high-visibility apparel. One is a general standard and one standard applies to public safety workers. The ANSI/ISEA 107-2004 Standard is a general worker standard that specifies different classes of high-visibility safety garments based on wearer's activities. This standard was revised and updated in January 2010, as ANSI/ISEA 107-2010. There is also a SECOND standard, ANSI/ISEA 207-2006 Standard for High-Visibility Public Safety Vests, which establishes design, performance specifications, and use criteria for highly visible vests that are used specifically by law enforcement, emergency responders, fire officials, and Department of Transportation (DOT) personnel.

You can choose various colors and classes of garments depending on the work being done and time of day.

Who must wear High-Visibility Apparel?

The Federal Highway Administration requires compliance with the Manual on Uniform Traffic Control Devices (MUTCD). **MUTCD requires all persons within the right-of-way who are exposed either to traffic or to work vehicles and construction equipment to wear high-visibility safety apparel that meets the ANSI 107 or 207 standard.** This includes crossing guards, police officers, public works employees, and anyone working in a roadway. A Class 2 or Class 3 garment is required as a minimum depending on the work being done and the time of day. OSHA requires construction workers in highway/road construction work zones to wear high-visibility retroreflective ANSI 107 Class 2 or Class 3 garments as well. (Letter of Interpretation 8/5/2009)

Apparel Colors

The ANSI 107 standard gives a choice of clothing colors: orange, yellow-green, or fluorescent versions of these colors for daytime work. In choosing clothing colors keep in mind:

- Workers should not be the same color as traffic barrels and traffic cones.
- Workers should not be the same color as construction vehicles.
- Workers should not be the same color as emergency vehicles.
- Workers should be identifiable to both motorists and construction vehicle operators.
- Motorists should be able to identify a worker before they get within 1,000 feet of the worker.
- Contrast against background is important. For example, orange vests may be best against wooded, green backgrounds while green vests may be best to contrast with orange barrels and cones.

For night work, these garments must also be retroreflective. The retroreflective material shall be orange, yellow, white, silver, strong yellow-green, or a fluorescent version of one of these colors and shall be visible at a minimum distance of 1,000 feet.

Classes of Apparel

There are three classes of garments based on the wearer's activities. The classes are differentiated by the amounts of retroreflective material, the placement of the material, and the design and color of the vest used.

Class 1 - This apparel provides a minimal amount of retroreflective material, and is unacceptable for any work done in a right of way according to the MUTCD. Class 1 clothing tends to blend in with the work environment instead of drawing attention to workers.

A harness that criss-crosses the body is not an adequate high-visibility garment, as it doesn't meet the minimum ANSI requirements for the amount of background material and retroreflective material.

Class 2 - This type of garment has less background and retroreflective materials than Class 3 garments. They are appropriate for most daytime activities, working off the roadway, where there is a physical barrier between the worker and traffic, on lower-speed, lower-volume roads, and secondary-road environments. These garments are required as a minimum where traffic exceeds 25 mph. Wearers include:

- Road construction workers where traffic is between 25-50 mph
- School crossing guards
- Parking and toll gate personnel
- Road sign installation personnel
- Law enforcement personnel directing traffic

Class 3 - This type of garment offers the greatest visibility. It allows workers to be seen at a minimum of 1/4 mile (1,280 feet). These garments have sleeves and pants and therefore have a larger amount of both background and retroreflective materials. Class 3 garments are used in high-risk environments, such as high-speed roadways (in excess of 50 mph), highly-congested areas, complex lane shifts, a wide range of weather conditions, and/or complex work zones. Class 3 garments are recommended for night work, when there is no physical barrier between the worker and traffic, working on the roadway, urban areas, and high-crash areas.

A Class 3 shirt must have sleeves, with retroreflective material between the shoulder and elbow. A Class 2 shirt can be used in a Class 3 setting if retroreflective pants are worn together with the Class 2 shirt. This is referred to as a Class 3 ensemble (Class E). Note that the pants cannot be worn without a Class 2 or 3 shirt.

Work activities requiring a minimum of class 3 apparel include:

- Traffic moving faster than 50 mph.
- Night work on any roadway, regardless of traffic speed
- When there is no physical barrier between the worker and traffic
- Urban areas and high-crash areas
- Flagging operations
- Temporary traffic control setup and removal
- Setup and removal of work zones
- Construction laborers and vehicle operators
- Survey crews
- Incident response, particularly at night
- Emergency utility crews dispatched at night

Public Safety Vests

The ANSI/ISEA 207-2006 Standard for High-Visibility Public Safety Vests establishes design, performance specifications, and use criteria for highly-visible vests that are used by law enforcement, emergency responders, fire officials, and DOT personnel. The primary distinction of ANSI 207 versus ANSI 107 lies in the amount of fluorescent background material. These vests fall somewhere between a Class 1 and Class 2 garment for amount of background fluorescent material; however, the amount of retroreflective material remains the same as a Class 2 garment.

Public safety officers should wear nothing less than this type of high-visibility garment. Dark shirts with a small amount of fluorescent material at the shoulders do not offer the visibility needed by police officers standing in a roadway. Older style rain coats with a single reflective stripe are not ANSI 207 compliant. Safety harnesses of any color are not acceptable under any circumstances.

Special features of public safety vests include specific vest dimensions and design features to allow public safety workers to access belt mounted equipment (gun, radio, CPR barrier mask) and/or the ability for the vests to tear away from the body at the shoulders if the wearer is stuck. The difference in fluorescent material allow for design accommodation of equipment belts and for flexibility to incorporate color panels, such as blue for police and red for fire, to enhance easy, on-scene identification of wearers. These garments are not intended to replace, or be interchangeable with, the ANSI 107 apparel used by construction workers.

Things to Consider When Selecting High-Visibility Apparel

To determine if Class 2 or Class 3 garments, or Public Safety Vests are the most appropriate high-visibility clothing, an assessment should include:

- Type of work being done (repaving, maintenance, police detail)
- Working conditions: time of day, temperature, weather
- Type of roadway, traffic pattern, congestion and speed
- Compliance with ANSI/ISEA 107-2004 or 2010 and ANSI 207-2006
- State and local standards and guidelines

When Should High-Visibility Safety Apparel Be Replaced?

High-visibility clothing does not last forever. Poor color contrast, low or no reflectivity, and deteriorating reflective strips would render a high-visibility safety garment unacceptable for use. High-visibility safety apparel should be replaced when it becomes faded, torn, dirty, soiled, worn, defaced, or if it is not visible at 1,000 feet day or night. The service life of high-visibility apparel depends on the type of work an individual performs while wearing the garment. If you think your safety apparel is questionable, you should replace it. Apparel that is worn on a daily basis has a service life expectancy of approximately 6 months, although apparel that is not worn on a daily basis may have a useful service life of up to 3 years.

Factors that may cause apparel to wear out more quickly, depending on the amount of use, include increased exposure to sunlight, heat, and more strenuous jobs likely to lead to soiling or tears. In addition, to prolong the life of the garment, you must follow manufacturers' instructions for laundering and storage.

Old apparel should be cut in half so that it can't be reused.

What Regulations and Standards Apply to Public and Private Sector Workers?

While private sector employees are covered by Federal OSHA, public sector employees in Massachusetts are not. The Massachusetts Department of Labor Standards (DLS), in accordance with Chapter 149 section 6, is charged with inspecting public sector workplaces in Massachusetts and determining what procedures and practices are required to protect workers. As a matter of policy, DLS references OSHA Standards as well as other consensus standards in determining whether proper procedures are being followed to protect workers. Since there are no specific OSHA standards for high-visibility apparel, DLS recommends that all public sector agencies follow Federal Highway Administrations Manual on Uniform Traffic Control Devices (MUTCD) as well as the ANSI Standards on High-Visibility Clothing (ANSI/ISEA 107 and 207). Complying with these standards will insure compliance with the provisions of Massachusetts General Law Chapter 149.

Where Can I Get More Information?

www.atssa.com

www.labsafety.com

www.mutcd.fhwa.dot.gov

http://www.ops.fhwa.dot.gov/publications/publications.htm

http://www.workzonesafety.org/fhwa_wz_grant/atssa/atssa_high_visibility

http://www.ehow.com/about_5590056_national-visibility-public-safety-vests.html

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