

In 1999, the American National Standard Institute (ANSI) and the International Safety Equipment Association (ISEA) published the ANSI/ISEA 107-1999 standard. This standard specifies different classes of high visibility safety garments based on wearer's activities. This standard was developed in response to workers who are exposed to low visibility conditions in hazardous work zones.

There are three classes of garments specified in the standard that are based on the wearer's activities.

Class 3: These garments provide the highest level of conspicuity for workers. These are for workers with high task loads in a wide range of weather conditions where traffic exceeds 50 mph. The standard "recommends these garments for all roadway construction personnel, vehicle operators, utility workers, survey crews, emergency responders, railway workers and accident site investigators".

Class 2: These garments are for workers who work near roadways where traffic exceeds 25 mph and need greater visibility in inclement weather. Workers who would typically wear these garments are: railway workers, school crossing guards, parking and toll gate personnel, airport ground crews and law enforcement personnel directing traffic.

Class 1: These garments are worn by workers where traffic does not exceed 25 mph and there is ample separation from the traffic. These workers typically are parking service attendants, warehouse workers in equipment traffic, shopping cart retrievers and those doing sidewalk maintenance.

The three classes of garments are differentiated by the requirements for amounts of retroreflective material that needs to meet specified performance criteria, the width and placement of the material and the color of vest used.

Class 3: These garments have the greatest visibility of the three classes. These will have more retroreflective material used in its construction than the Class 2. This requirement is in accordance with Table 1 in the standard. This table gives minimum areas of background and coverage areas of the retroreflective material. The width of the retroreflective material to be used according to Table 1; shall not be less than 50mm wide.

Class 2: These garments have superior visibility and are more conspicuous than the Class 1 garments. The minimum width of the retroreflective material used on these is not less than 35mm.

Class 1: These garments need to be conspicuous and use retroreflective materials not less than 25mm in width.

There are charts and figures in the standard that give the minimum requirements for retroreflectivity (chromaticity) and luminance (color of vest) combinations that are acceptable. The luminous colors that are used and accepted as long as they meet the minimum standard are fluorescent yellow-green, fluorescent orange-red, and fluorescent red.

The design of the garments and where the tape should be applied is in Appendix B2 of the standard. The garments vary, but can include coveralls, jackets, vests, trousers and sash belts. Section 5.2.2 of the standard has suggested design configurations. For example, 5.2.2a states "jackets, waistcoats, vest and ponchos shall be designed to permit maximum visibility of the wearer". 5.2.2b states that these garments should "have one or more horizontal bands of retroreflective material around the torso and bands of retroreflective material joining the uppermost torso band from the front to the back over each shoulder".

Sources for More Information

ANSI/ISEA 107.1999 American National Standard for High Visibility Safety Apparel

Common Questions

Q. Does OSHA require this type of PPE?

A. ANSI/ISEA developed this standard to address to situations in which workers are in danger because of low visibility. These garments meet ANSI/ISEA criteria for performance and visibility. There is not an OSHA standard at this time requiring that vests be worn, although individual municipalities, counties and states may require their use.

Please note: The information contained in this publication is intended for general information purposes only. This publication is not a substitute for review of the applicable government regulations and standards, and should not be construed as legal advice or opinion. Readers with specific questions should refer to the cited regulation(s), or consult with an attorney.