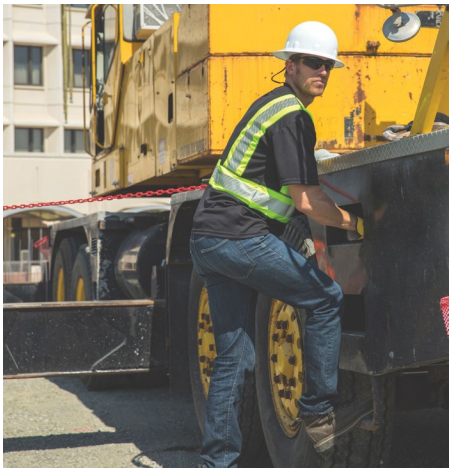
ANSI = American National Standards Institute approves standards for all kinds of items from steel to safety glasses to High Visibility Safety Apparel (**HVSA**). The standard provides a consistent authoritative guide for design, performance specifications, and use of high-visibility garments.

ISEA = International Safety Equipment Association; this is a member organization of companies that develop a series of ANSI standards dealing with safety. ISEA sells the ANSI Standards it develops.

The ANSI Standard is prepared by members of the High Visibility Products Group of the International Safety Equipment Association. The members of the group are professional experts in the high visibility industry including manufacturers of product, materials and laboratory testing. The ISEA/ANSI 107 Standard is updated every 5 years

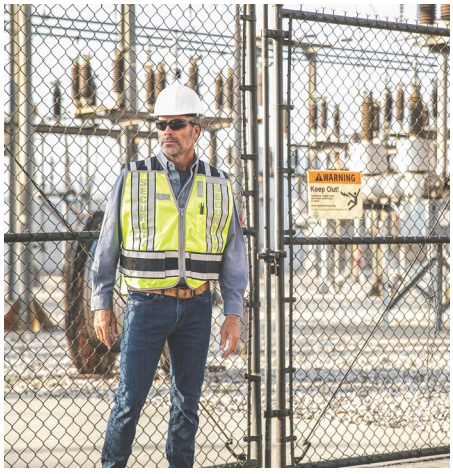
The ANSI/ISEA 107-2020 Standard on High Visibility Safety Apparel (HVSA) specifies 3 Types of work environments and 3 Classes of garments.

The 3 Types of Work Environments as specified by the ANSI/ISEA 107-2020



Type O is for Off Road work in zones that have restricted access to public vehicles but still pose a low visibility struck by hazard. Examples are warehouses, chemical plants, building job sites, etc.

Type R is Roadway work zones which include exposure to traffic (vehicles using the highway for purposes of travel) from public access highway rights-of-way, or roadway temporary traffic control (TTC) zones or from work vehicles and construction equipment within a roadway temporary traffic control (TTC) zone.



Type P is for First Responders who are exposed to all the hazards of Type R work zones but also have competing hazards or require access to special equipment.

The 3 Classes of Garments as specified by the ANSI/ISEA 107-2020

Class 1 is for use in Type O work environments require 155 square inches of retroreflective material and 217 square inches of background material.

Class 2 can be for either Type R or Type P and require the minimum areas specified in the chart below.

Class 3 can be for either Type R or Type P and require the minimum areas specified in the chart below.

Supplemental **Class E** Pants, bib overalls, shorts, and gaiters shall be designated Class E. Class E items shall not be worn alone for the purposes of meeting HVSA PPE requirements. **When a Class E item is worn with Performance Class 2 or Class 3, the overall classification shall be Performance Class 3.**

Table 1. Minimum Areas of Visible Materials

Garment Type	Performance Class	Background Material	Retroreflective or Combined Performance Materials	Minimum Width Reflective Material
Type O Off-road and Non-Roadway Use	**Class 1**	**217 in²**	**155 in²**	**1 in.**
Type R Roadway and Temporary Traffic Control Zones	**Class 2***	**775 in²**	**201 in²**	**1 in.## 1.38 in.**
	Class 3**	**1240 in²**	**310 in²**	**1 in.## 2 in.**
*For the smallest size offered in Type R, Performance Class 2, a minimum of 540 in² of background material may be used to accommodate small-sized workers. All subsequent larger sizes must use 775 in². **For the smallest size offered in Type R, Performance Class 3, a minimum of 1000 in² of background material may be used to accommodate small-sized workers. All subsequent larger sizes must use 1240 in².				
Type P Emergency and Incident Responders and Law Enforcement Personnel	**Class 2**	**450 in²**	**201 in²**	**1 in.## 2 in.**
	Class 3	**775 in²**	**310 in²**	**1 in.## 2 in.**
Supplemental Items# Pants, Overalls, Shorts, Rain Pants and Gaiters	**Class E**	**465 in²**	**109 in²**	**1 in.## 2 in.**
# When a Supplemental Class E item is worn with Performance Class 2 or 3, the overall classiication for the ensemble shall be Performance Class 3. ## For use with split-trim designs (See section 6.3.1.2) NOTE: Combined-performance materials can be counted toward the minimum area requirements for background material specified in Table 1				

Definitions of Visible Materials

Retroreflective, combined-performance, and background materials are to be certified to the performance requirements in the standard. High visibility safety apparel manufacturers must make documentation available to verify that the finished garments also meet the requirements of the standard.

Background material: Colored fluorescent material intended to be highly conspicuous, but not intended to comply with the requirements of this standard for retroreflective material.

Retroreflective material: Material that reflects and returns a relatively high proportion of light in a direction close to the direction from which it came.

Combined-performance material: A retroreflective material that is also a fluorescent material.

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ANSI/ISEA 107-2020 - THE BASICS

The ANSI standard has provided requirements for garment labeling. For the ANSI label to state "FR" or "Flame Resistance", the material must meet one of the below test methods in its entirety.

ASTM F1506-19, Standard Performance Specification for Flame Resistant and Electric Arc Rated Protective Clothing Worn by Workers Exposed to Flames and Electrical Arc

ASTM F1891-19, Standard Specification for Arc and Flame Resistant Rainwear

ASTM F2302-19, Standard Performance Specification for Labeling Protective Clothing which Provides Resistance to Incidental Exposures to Heat or Open Flame

ASTM F 2733-17, Standard Specification for Flame Resistant Rainwear for Protection Against Flame Hazards

NFPA 1977, Standard on Protective Clothing and Equipment for Wildland Firefighting, 2016

NFPA 2112, Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short Duration Thermal Exposures from Fire, 2018

All items that do not meet the above **FR Standards** entirely must be labeled as **Non-FR** or **Not FR**.

Garment Type / Performance Class Examples

Type O | Class 1 Compliant

B200

Type R | Class 2 Compliant

1527

9160

S5002

Type R | Class 3 Compliant

1550

JS130

JS150

Type P | Class 2 Compliant

4003BV

Type P | Class 3 Compliant

RWJ108

Supplemental Class E Compliant

3118

3931

3932/3934