



ANSI/ISEA

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American National Standard for High-Visibility Safety Apparel And Accessories

ANSI/ISEA 107-2015
(REVISION OF ANSI/ISEA 107-2010)

**American National Standard for
High-Visibility Safety Apparel and Accessories**

Secretariat
International Safety Equipment Association

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American National Standards Institute, Inc.

**American
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Standard**

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Foreword

(This Foreword is not part of American National Standard ANSI/ISEA 107-2015)

ANSI/ISEA 107-2015 is latest revision of a voluntary industry consensus standard that was first published in 1999 and revised in 2004 and 2010. Prior to its initial publication there was no regulation or guideline for the design, performance or materials for high visibility PPE in the United States. Since 1999, the standard has been recognized by federal, state and local authorities as well as private industry. Current US Department of Transportation, Federal Highway Administration (FHWA) regulations have required workers on or near Federal-aid highways to wear Class 2 or Class 3 garments, and the 2009 revision to the Manual on Uniform Traffic Control Devices (MUTCD) extends this provision to workers on all roadways in the United States.

The need to be seen is recognized as a critical issue for worker safety. Low visibility is a serious hazard for all workers who must perform tasks near moving vehicles or equipment. Workers must be visible to vehicle operators in all lighting conditions and against complex environmental backgrounds. The sooner a vehicle operator sees a pedestrian worker, the longer the operator has to avoid an incident. High visibility safety apparel and accessories dramatically enhance worker visibility.

This new edition consolidates the requirements of ANSI/ISEA 107-2010 and ANSI/ISEA 207, *American National Standard for Public Safety Vests* in an effort to establish a single, comprehensive document that considers all occupational tasks. While the standard continues to present three performance classes of garments based on the amount of visible materials and design attributes incorporated into the final configuration, it also identifies garment types based on expected use settings and work activities being performed. These are designated as off-road (type O), roadway and temporary traffic control (type R), or public safety activities (type P).

Fit and comfort of high-visibility safety apparel play an important role in worker acceptance of wearing these items as part of their daily activity. While previous editions provided some freedom in design that resulted in smaller sized garments capable of meeting the standard's requirements, specifiers and users wearing garments classified as Performance Class 2 under the ANSI/ISEA 107-2010 standard edition had expressed concern regarding appropriately fitting compliant garments for smaller sized workers. Garments that are not properly sized to fit can expose workers to catch hazards or interfere with other protective gear, potentially compromising worker safety.

In response, the ANSI/ISEA 107-2015 standard edition now includes provisions for Type R Performance Class 2 and Performance Class 3 garments in the smallest size offered to utilize a reduced amount of background material to allow for sizing more appropriate for smaller workers. It is stressed that these reduced amounts are intended to address the smaller sized workers' needs specifically, that only the smallest size offered for any one garment be allowed to deviate from the stated minimum and that the resulting configuration using these amounts be consistent with the other sizes for that particular garment.

Additionally and in recognizing the growing use of high-visibility accessory items such as arm bands or headwear, the standard defines minimum material requirements for these accessories. New labeling requirements will identify the garment by performance class, type and by its flame resistance characteristics as defined in the standard. ANSI/ISEA 107-2015 also expands the examples of garment configurations to illustrate compliant and non-compliant designs.

This revision was prepared by members of the High Visibility Products Group of the International Safety Equipment Association (ISEA). The following companies were members of the group at the time of the approval of the standard:

511 Tactical Series	MSA Safety
Arcwear.com	NASCO Industries
Blauer Manufacturing	National Safety Apparel
ERB Industries	OccuNomix International
Ergodyne	ORAFOL Americas, Inc.
Honeywell Safety Products	Pacific Safety Supply
Kimberly-Clark Corporation	Performance Textiles, Inc. (div. of Brand and Oppenheimer)
M.L. Kishigo Manufacturing	Protective Industrial Products
Lakeland Industries	Radians, Inc.
3M Company	Safe Reflections
MCR Safety	Tingley Rubber
	Vartest Laboratories

This standard was processed and approved using consensus procedures prescribed by the American National Standards Institute. The following organizations were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

American Contractors Insurance Group	Liberty Ambulance Services
Atlas Industrial Contractors	Michigan Department of Transportation
Cintas Corporation	Ms. Sharon Morales, CSP
City of Hillsboro	National Safety Apparel
Colorado Department of Transportation	Oldcastle Materials
Daoming Optics and Chemical	Performance Textiles
Denton Companies	Power Consultants Inc.
E&B Pavings	Reflective Apparel Factory
Emergency Responders Safety Institute	Rugged Safety
Fairfax County Government	Safety Priority Consultants
Federal Aviation Administration	SGS Consumer Testing Services
Federal Highway Administration	State of Ohio Public Employment Risk Reduction Program
Fruitport Township Police Department	Syracuse Utilities
Glen Raven Technical Fabrics	U.S. Department of Labor – OSHA
Golder Associates, Inc.	Zurich Services Corporation
Hensel Phelps	
International Association of Chiefs of Police	
Laborers' Health and Safety Fund of North America	

Suggestions for the improvement of this standard are welcome. Send suggestions to:

International Safety Equipment Association
1901 N. Moore Street
Arlington, VA 22209 USA
isea@safetysafetyequipment.org

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American National Standard for High-Visibility Safety Apparel and Accessories

1 Scope

This standard specifies performance requirements for high-visibility safety apparel and accessory PPE. For the purpose of this standard, the term "high-visibility safety apparel (HVSA)" shall be used to mean apparel and accessory PPE intended to provide conspicuity to the user in hazardous situations under any light conditions by day and under illumination by vehicle headlights in the dark or other low light conditions.

Performance requirements are included for color, retroreflection, and minimum areas of retroreflective and combined-performance materials, as well as the recommended configuration of the materials. Performance requirements are also provided for the color, physical properties, and minimum areas of background materials used in the construction of HVSA and accessories. Test methods are provided in the standard to ensure that a minimum level of visibility is maintained when garments are subjected to ongoing care procedures. These specifications may prescribe a wide variety of occupational HVSA, but shall not be applied to firefighter turnout gear.

2 Purpose

Conspicuity is enhanced by high contrast between the garment and the ambient background against which it is seen. This standard provides performance requirements for conspicuous materials to be used in HVSA and specifies minimum amounts of background, retroreflective and combined-performance materials, colors and placement of materials for garments, supplemental items and accessory items used to enhance the visibility and safety of workers. Performance Class guidelines are identified with corresponding recommendations for selection based on worker risk hazards, such as complex backgrounds, vehicular traffic and speeds encountered.

3 Definitions

Accredited laboratory: A laboratory having a certificate of accreditation meeting the requirements ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories* for the collection and analysis of data within the parameters of this 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.

Band: A strip or stripe that contrasts with the adjacent material in color, texture, material or function.

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

Conspicuity: The characteristics of an object influencing the probability that it will come to the attention of an observer, especially in a complex environment which has competing objects.

Declaration of conformity: A statement by the manufacturer or supplier, based on a decision following review, that fulfillment of the requirements specified in this standard has been demonstrated. (Appendix D3)

Flame resistance: The property of a material whereby flaming combustion is prevented, terminated or inhibited following application of a flaming or non-flaming source of ignition with or without subsequent removal of the ignition source.

Fluorescent material: Material that instantaneously emits optical radiation within the visible range at wavelengths longer than absorbed and for which emission ceases upon removal of the source of irradiation. These materials enhance daytime visibility, especially during dawn and dusk.

Gaiters: High-visibility safety apparel covering the lower leg above the ankle to mid-calf or knee.