



ANSI / ISEA

107-2020

---

## American National Standard for High-Visibility Safety Apparel

This is a preview. [Click here to purchase the full publication.](#)

**ANSI/ISEA 107-2020**  
(REVISION OF ANSI/ISEA 107-2015)

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

Secretariat  
**International Safety Equipment Association**

Approved September 8, 2020  
**American National Standards Institute, Inc.**

**American  
National  
Standard**

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether they have approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review and users are cautioned to obtain the latest editions.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no persons shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published by

**International Safety Equipment Association  
1901 North Moore Street, Arlington, Virginia 22209 USA**

Copyright 2020 by ISEA

All rights reserved.

No part of this publication may be reproduced .....  
in any form, in an electronic retrieval system or  
otherwise, without the prior written permission  
of the publisher.

Printed in the United States of America

## Foreword

(This Foreword is not part of American National Standard ANSI/ISEA 107-2020)

This 2020 version of ANSI/ISEA 107 represents the fifth edition of the voluntary industry consensus standard addressing high-visibility safety apparel used in occupational settings. Since its initial publication in 1999, the standard has been the authoritative document for the design, performance or materials for high visibility PPE in the United States, having been codified into U.S. Department of Transportation, Federal Highway Administration (FHWA) regulations and incorporated by reference into other relevant worker protection standards.

ANSI/ISEA 107-2020 retains the long-standing Type-Performance Class designation of garments, whereby the Type is based on the expected use setting and the Performance Class is identified based on the amount of visible materials and design attributes incorporated into the finished garment. The criteria for high-visibility accessories have been removed in favor of continuing to emphasize the configurations and design requirements that contribute to the Type-Performance Class designation. Wearers and users should be encouraged to utilize high-visibility accessories including gloves, hoods, and head coverings to enhance their visibility.

It has been recognized that there are many work applications where worker visibility is imperative and the working environment itself can cause the garment to become soiled easily. To accommodate these scenarios, the updated ANSI/ISEA 107 version includes specific criteria for a single-use disposable coverall. It should be noted that this coverall configuration complies with the requisite minimum material amounts and color requirements imposed on all compliant high-visibility safety apparel and that the associated material integrity requirements are only applicable to single-use disposable coveralls, for which unique marking is applied. Updates have also been made to the tests methods in an effort to align more closely with other material integrity tests and to recognize current versions used for evaluating the materials.

The 2020 edition of the standard is introducing the concept of measuring the overall nighttime luminance of a garment by including optional language that allows a manufacturer to test a garment according to ASTM E1501. The committee believes that this standardized method and the data it generates throughout the next revision cycle will allow wearers to more easily compare the nighttime performance of garments and manufacturers to improve the design and performance of HVSA.

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:

|                            |  |
|----------------------------|--|
| Arcwear.com                | NASCO Industries   |
| Blauer Manufacturing       | National Safety Apparel                                    |
| Bulwark FR                 | OccuNomix International                                    |
| Carhartt                   | ORAFOL Americas, Inc.                                      |
| DuPont                     | Pacific Safety Supply                                      |
| ERB Industries             | Performance Textiles, Inc. (div. of Brand and Oppenheimer) |
| Ergodyne                   | Protective Industrial Products                             |
| Global Glove & Safety      | Pyramex Safety   |
| Ironwear                   | Radians, Inc.  |
| M.L. Kishigo Manufacturing | Safe Reflections   |
| Lakeland Industries        | Surewerx   |
| 3M Company                 | Tingley Rubber   |
| Majestic Glove             | Vartest Laboratories                                       |
| MCR Safety                 | VisionVest   |

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 Road and Transportation Builders  
Association  
American Traffic Safety Services Association  
Association of Hazards Materials Professionals  
BSNF Railway  
Ms. Holly Burgess, CSP  
FCx Performance  
Georgia Department of Transportation  
Laborers' Health and Safety Fund of North  
America

Michigan Department of Transportation  
North Carolina State University  
Reflective Apparel Factory  
Roza Sunnyside Valley Irrigation  
State of Ohio Public Employment Risk Reduction  
Program  
Texas Department of Transportation  
Westex by Milliken

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@safetyequipment.org](mailto:isea@safetyequipment.org)

## Table of Contents

| SECTION  | PAGE |
|--|------|
| 1. Scope .....   | 1    |
| 2. Purpose.....  | 1    |
| 3. Definitions .....   | 1    |
| 4. Compliance .....  | 2    |
| 4.1 Background Materials .....   | 2    |
| 4.2 Combined-Performance and Retroreflective Materials.....  | 2    |
| 4.3 Finished HVSA.....   | 2    |
| 4.4 Declaration of Conformity .....  | 3    |
| 5. Types and Classes .....   | 3    |
| 5.1 HVSA Types.....  | 3    |
| 5.2 Performance Classes.....   | 3    |
| 5.3 Supplemental Class E.....  | 4    |
| 6. Design.....   | 4    |
| 6.1 Ergonomics .....   | 4    |
| 6.2 Apparel Configurations .....   | 4    |
| 6.3 Construction Requirements .....  | 6    |
| 7. Criteria for Optional Features and Testing .....  | 7    |
| 7.1 Pockets .....  | 7    |
| 7.2 Identification Panels, Lettering and Logos (Type R and P) .....  | 7    |
| 7.3 Identification of Personnel (Type P).....  | 8    |
| 7.4 Flame Resistance .....   | 8    |
| 7.5 Single-Use Disposable Coveralls.....   | 8    |
| 7.6 Overall Luminance .....  | 8    |
| 8. Requirements for Background and Combined-Performance Retroreflective Materials .....                              | 8    |
| 8.1 Color.....   | 8    |
| 8.2 Colorfastness of Background Material .....   | 9    |
| 8.3 Dimensional Change of Background Material .....  | 10   |
| 8.4 Mechanical Properties of Background Material .....   | 10   |
| 8.5 Performance Under Wet Conditions .....   | 10   |
| 8.6 Water Vapor Permeability for Background Materials Classified as Breathable.....                                  | 10   |
| 9. Photometric and Physical Performance Requirements for Retroreflective and Combined-<br>Performance Materials..... | 11   |
| 9.1 Retroreflective Performance Requirements Prior to Test Exposure.....   | 11   |
| 9.2 Retroreflective Performance Requirements After Test Exposure.....  | 11   |