American National Standard
for Secondary Single-Use Flame Resistant
Protective Clothing for Use Over Primary
Flame Resistant Protective Clothing

Secretariat
International Safety Equipment Association

Approved April 24, 2018
American National Standards Institute, Inc.
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CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time.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, Suite 808,  
Arlington, Virginia 22209

Copyright 2018 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 203-2018)

As many work environments remain increasingly complex and create potential exposure to multiple hazards simultaneously, it is imperative that workers are adequately protected. Selection of appropriate protective clothing is particularly important where flash fire or flame hazards exist. Although the employee will be wearing a primary thermal garment to protect against these hazards, other tasks being performed may require the use of a secondary garment to provide barrier protection to prevent the primary item from becoming contaminated with dirt, paint, grease and oil, solvents or other contaminants.

To address the gaps in appropriately evaluating such clothing, the International Safety Equipment Association (ISEA) has developed this new standard to establish minimum performance and labeling requirements for secondary single-use flame resistant protective clothing. These are commonly used in utility work and refinery maintenance and in steel processing facilities where metal is being cut or welded.

Apparel covered by ISEA 203-2018 is designed for use in industrial settings where flame hazards may exist and such clothing will not negatively impact the thermal performance afforded by the primary flame resistant protective clothing worn that is worn underneath. Compliant items are independently evaluated for flame resistance and evaluated for flash fire exposure by layering the garment over a primary thermal garment.

This standard was prepared by members of the Protective Apparel of the International Safety Equipment Association (ISEA). The following companies were members of the group at the time of the approval of the standard:

Ansell Protective Products  Kimberly-Clark Professional
Bulwark FR  Lakeland Industries, Inc.
Carhartt  3M Company
DuPont Personal Protection  Magid Glove and Safety
Encon Safety Products  NASCO Industries
Gentex Corporation  National Safety Apparel
Honeywell Safety Products  OccuNomix International LLC
International Enviroguard  Rasco FR
Ironwear

This standard was approved using consensus procedures prescribed by the American National 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 Wind Energy Association  Miliken, Inc.
ArcWear  NEMO Inc.
City of Seattle  NR Energy
Citgo  Mr. Roy Supak, CSP
FCx Performance  Syracuse Utilities
Freight Car America  Tulane University
Heritage Thermal  UL, LLC
Investa  Valero
International Personnel Protection, Inc.  Workrite Uniforms
Kimble Companies

Inquiries related to the standard and suggestions to improve the document can be emailed to isea@safetyequipment.org.
## Contents

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scope</td>
<td>1</td>
</tr>
<tr>
<td>2. Purpose</td>
<td>1</td>
</tr>
<tr>
<td>3. Normative References</td>
<td>1</td>
</tr>
<tr>
<td>4. Definitions</td>
<td>1</td>
</tr>
<tr>
<td>5. Compliance</td>
<td>2</td>
</tr>
<tr>
<td>5.1 General</td>
<td>2</td>
</tr>
<tr>
<td>5.2 Documentation</td>
<td>3</td>
</tr>
<tr>
<td>6. Performance Requirements</td>
<td>3</td>
</tr>
<tr>
<td>6.1 General</td>
<td>3</td>
</tr>
<tr>
<td>6.2 Flame Resistance Test</td>
<td>3</td>
</tr>
<tr>
<td>6.3 Flash Fire Exposure Test</td>
<td>3</td>
</tr>
<tr>
<td>7. Marking</td>
<td>4</td>
</tr>
<tr>
<td>7.1 General</td>
<td>4</td>
</tr>
<tr>
<td>7.2 Specific Marking</td>
<td>4</td>
</tr>
</tbody>
</table>

### Appendices

<table>
<thead>
<tr>
<th>Appendix A</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Examples</td>
<td>A-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appendix B</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation Examples</td>
<td>A-2</td>
</tr>
<tr>
<td>B2: Declaration of Conformity</td>
<td>A-7</td>
</tr>
</tbody>
</table>
American National Standard
for Secondary Single-Use Flame-Resistant Protective Clothing for Use over Primary Flame-Resistant Clothing

1. Scope

1.1 This standard establishes minimum performance and labeling requirements for secondary single-use flame resistant protective clothing. Such clothing is designed for use in industrial settings where flame hazards may exist and such clothing will not negatively impact the thermal performance afforded by the primary flame resistant protective clothing worn underneath. Protective clothing covered by this standard includes items such as, but not limited to, encapsulating suits, coveralls, jackets, pants, lab coats, aprons and sleeves.

NOTE: For single use and multiple use items, the word use is defined as exposure to chemical, flame or laundering.

NOTE: The performance requirements in this standard are not meant to assess garments intended for use as rainwear.

1.2 This standard does not specifically address individual testing of components and findings, which include but are not limited to zippers, elastic seam thread, zipper tape, buckles, hook and loop tape and draw cords. This standard does not address multiple use secondary single-use flame resistant protective clothing. This standard does not address protective clothing designed for protection from hot liquids, steam, or electric arc exposure. This standard does not address barrier performance requirements for chemical or biological protection afforded by the garment or ensemble.

This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Purpose

This standard is intended to provide manufacturers with minimum requirements for testing and labeling secondary single-use flame resistant protective clothing. The items detailed in this standard are intended for use in multi-hazard environments where combinations of liquid or solid particulate hazards are accompanied by the potential for exposure to flame hazards. It is not the intent of this standard to address all situations.

3. Normative References


ANSI/ISEA 125, American National Standard for Conformity Assessment of Safety and Personal Protective Equipment, 2014


CAN/CGSB 4.2 No. 27.5, Textile Test Methods — Flame Resistance — 45° Angle Test — One-Second Flame Impingement, 2008

4. Definitions

After-flame: A persistent flaming of a material after the ignition source has been removed.

After-flame time: The length of time for which a material continues to flame after the ignition source has been removed.

Char length: The distance from the fabric edge, which is directly exposed to the flame to the furthest point of visible fabric damage after a specified tearing force has been applied.