CANADIAN STANDARDS ASSOCIATION

Z96-09
(reaffirmed 2014)

High-visibility safety apparel

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CANADIAN STANDARDS ASSOCIATION

Standards Update Service

Z96-09
May 2009

Title: *High-visibility safety apparel*
Pagination: 44 pages (viii preliminary and 36 text), each dated **May 2009**

To register for e-mail notification about any updates to this publication

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CSA Standard

Z96-09
High-visibility safety apparel

Published in May 2009 by Canadian Standards Association
A not-for-profit private sector organization
5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6
1-800-463-6727 • 416-747-4044

The Canadian Standards Association (CSA) prints its publications on Rolland Enviro100, which contains 100% recycled post-consumer fibre, is EcoLogo and Processed Chlorine Free certified, and was manufactured using biogas energy.

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ISBN 978-1-55491-112-7
Technical Editor: *Dave Shanahan*

Contents

Technical Committee on High-Visibility Safety Apparel *v*

Preface *viii*

1 Scope *1*

2 Reference publications *1*

3 Definitions *4*

4 Garment class and design *5*
4.1 Classes of high-visibility safety apparel (HVSA) *5*
4.2 Garment design *6*
4.2.1 Retroreflective or combined-performance stripes/bands *6*
4.2.2 Coloured stripes/bands — configurations *7*
4.2.3 Background material *7*
4.2.4 ID patches and lettering *7*
4.2.5 Tear-away capability *7*
4.3 Apparel design considerations for emergency first-responder HVSA *8*

5 Requirements for background and combined-performance retroreflective materials *8*
5.1 Colour of background and combined-performance materials *8*
5.2 Colourfastness properties for background materials *8*
5.2.1 Colourfastness to light (Xenon) *8*
5.2.2 Colourfastness to crocking *8*
5.2.3 Colourfastness to perspiration *8*
5.2.4 Colourfastness properties related to care labeling *8*
5.3 Dimensional change for background materials *8*
5.4 Mechanical properties of background materials *9*
5.4.1 Bursting strength of knitted and other nonwoven materials *9*
5.4.2 Tear resistance of woven materials (uncoated, coated, or laminated) *9*
5.5 Performance under wet conditions *9*
5.5.1 Water repellency *9*
5.5.2 Water resistance *9*
5.5.3 Water penetration *9*
5.6 Water vapour permeability for background materials classified as breathable *9*
5.7 Ergonomics *10*

6 Photometric and physical performance requirements for retroreflective materials *10*
6.1 Performance of retroreflective material prior to test exposures *10*
6.2 Performance of retroreflective material after test exposures *11*

7 Flame- or flash-resistant (FR) garment applications *11*
7.1 Application *11*
7.2 FR garment design *11*
7.2.1 FR-application background material *11*
7.2.2 FR-application stripes/bands *11*
7.3 FR-application garment marking *12*

8 Test methods *12*
8.1 Sampling and conditioning *12*

8.2 Determination of colour *12*
8.3 Determination of retroreflective photometric performance *12*
8.4 Retroreflection after test exposures *13*
8.4.1 Abrasion *13*
8.4.2 Flexing *13*
8.4.3 Folding at cold temperatures *13*
8.4.4 Exposure to temperature variation *13*
8.4.5 Washing and dry cleaning *13*
8.4.6 Washing according to care label *13*
8.4.7 Dry cleaning according to care label *14*
8.4.8 Retroreflective performance under wet conditions *14*

9 Care labelling *15*

10 Marking *15*

11 Instructions for use *16*

Annexes
A (informative) — User guidelines *23*
B (informative) — Examples of compliant apparel designs *25*
C (informative) — Sample CSA Z96 compliance self-declaration forms *34*

Tables
1 — Minimum areas of high-visibility material (any size garment) *17*
2a — Colour — Fluorescent background material *18*
2b — Colour — Bright background material *18*
3 — Colour — Combined-performance retroreflective material *19*
4 — Colourfastness *19*
5 — Minimum coefficient of retroreflection in cd/(lx • m^2) for level 2 retroreflective or combined-performance retroreflective material *20*
6 — Minimum coefficient of retroreflection in cd/(lx • m^2) for level 1 retroreflective or combined-performance retroreflective material *20*
7 — Minimum coefficient of retroreflection in cd/(lx • m^2) for level FR retroreflective or combined-performance retroreflective material *20*
8 — Test exposure *21*

Figures
1 — Minimum side coverage for Class 2 apparel *21*
2 — Wet performance test apparatus set-up *22*

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Preface

This is the second edition of CSA Z96, *High-visibility safety apparel*. It supersedes the previous edition published in 2002, and is based on the identically titled American National Standards Institute Standard ANSI/ISEA 107. It is also designed to be in harmony with CEN EN 471.

The focus of this Standard is on the performance of retroreflective and background materials incorporated into garments intended to provide the wearer with increased conspicuity under both well-illuminated and low-light or dark work environmental conditions. It sets out levels of retroreflective performance (i.e., light reflected from vehicle headlights as viewed by the vehicle operator), the colours and luminosity of background materials, and the human body coverage of the high-visibility components. Three classes of garments have been defined based on body coverage of bright or fluorescent-coloured materials, and two levels of performance have been specified for retroreflective materials. In addition, special allowances have been made for garments that are primarily intended to provide electrical flash and flame protection.

This Standard recommends that a hazard assessment be carried out on each job to determine the risk to workers of being struck by moving vehicles and the environmental conditions under which work is performed. For this purpose, reference is made to the companion publication, CSA Z96.1, *Guideline on selection, use, and care of high-visibility safety apparel*, which provides advice for the application of high-visibility safety apparel (HVSA) to specific risk categories and job types. This new Guideline recognizes that the first line of defence against personal injury accidents is to control the design of the workplace and the exposure of workers to moving vehicles (e.g., through the use of physical barriers). Improved conspicuity of workers through the use of HVSA is a second line of defence, providing a greater cushion of warning to vehicle operators so that they might avoid endangering workers on foot.

As an aid to users of this Standard, the main principles of selection, care, and use are provided in Annex A and examples of compliant apparel designs are shown in Annex B. Purchasers of HVSA should seek proof that the materials used and the design of the garment meet the requirements of this Standard. As an aid to this process, examples of manufacturers' compliance self-declaration forms have been added in Annex C.

This Standard was prepared by the Technical Committee on High-Visibility Safety Apparel, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

May 2009

Notes:

(1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

(2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*

(3) *This publication was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.*

(4) *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*

(5) *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.*

Requests for interpretation should

(a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;

(b) provide an explanation of circumstances surrounding the actual field condition; and

(c) be phrased where possible to permit a specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are published in CSA's periodical* Info Update*, which is available on the CSA Web site at www.csa.ca.*

Z96-09
High-visibility safety apparel

1 Scope

1.1
This Standard specifies requirements for occupational apparel that is
(a) capable of signalling the user's presence visually; and
(b) intended to provide the user with conspicuity in hazardous situations under any light conditions and under illumination by vehicle headlights.

1.2
Performance requirements are included for colour, retroreflection, and minimum areas, as well as for the configuration of the materials. Performance requirements are also provided for the physical properties of background materials used in the construction of high-visibility safety apparel (referred to as "HVSA" in this Standard). 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.

1.3
This Standard provides performance requirements for conspicuous materials to be used in HVSA and specifies classes of garments, minimum areas, and placement of these materials.
Note: *Conspicuity is enhanced by high contrast between clothing and the work environment against which it is seen.*

1.4
This Standard specifies minimum amounts of retroreflective materials, together with colour and requirements for placement of materials, for apparel used to enhance the visibility and safety of workers.
Categories of high-visibility garments are identified and appropriate markings for apparel are recommended.

1.5
In CSA Standards, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; "should" is used to express a recommendation or that which is advised but not required; "may" is used to express an option or that which is permissible within the limits of the standard; and "can" is used to express possibility or capability. Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications
The Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

CSA (Canadian Standards Association)
CAN/CSA-Z94.1-05
Industrial protective headwear — Performance, selection, care, and use