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Z94.3.1-16

Guideline for selection, use, and care of eye and face protectors

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Contents

Technical Committee on Eye and Face Protection	3
Subcommittee on Eye Protection Users Guide	7
Preface	8
1 Introduction	9
2 How the eye works	10
3 Compliant and certified eye and face protectors	10
3.1 General	10
3.2 Prescription protective eyewear	11
4 Terminology related to selection, use, and care of eye and face protectors	11
5 Contact lenses	12
6 Specialty protectors	12
6.1 Laser protective eyewear	12
6.1.1 General	12
6.1.2 What to know about the laser	12
6.1.3 Factors to consider when choosing laser safety eyewear	12
6.1.4 How laser safety eyewear works	13
6.2 Arc flash protectors	13
7 Lens materials	14
8 Protective eyewear fit testing	14
8.1 General	14
8.2 Eye protector adjustment	15
8.3 Refitting eyewear	15
9 Prescription protective eyewear	15
9.1 General	15
9.2 Prescription lenses	16
10 Lens colors	17
11 Contact types available	18
12 Classification of eye and face protectors	19
13 Classification of hazards and recommended protectors	21
14 Care and maintenance	25

15 Three important rules 25

16 Summary 26

17 Referenced documents and additional resources 26

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Preface

This is the third edition of CSA Z94.3.1, *Guideline for selection, use, and care of eye and face protectors*. It supersedes the previous editions, published in 2009 under the title *Selection, use, and care of protective eyewear*, and in 2002 under the title *Protective eyewear: A user's guide*.

The Guideline covers the selection, use, and care of eye and face protectors and provides advice for the proper selection of eye and face protection for specific hazardous activities.

Major changes to this edition include the following:

- a) added terminology on compliance and certification of eye and face protectors (see Table 1);
- b) revised the laser classes in accordance with the current edition of ANSI Z136.1 (see Clause 6.1);
- c) added allowance for arc flash protectors and requirements that apply to arc flash protective equipment (see Clause 6.2);
- d) updated the lens materials and properties (see Clause 7);
- e) added guidelines for safety eyewear fit testing (see Clause 8); and
- f) added two new hazard types, Hazard Types I (lasers) and J (electric arc flash) in the selection of protectors for each hazard type (see Clauses 12 and 13).

This Guideline was prepared by the Subcommittee on Eye Protection Users Guide, under the jurisdiction of the Technical Committee on Eye and Face Protection and the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

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 Guideline is stated in its Introduction, it is important to note that it remains the responsibility of the users of the Guideline to judge its suitability for their particular purpose.*
- 3) *This Guideline 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 Guideline.*
- 4) *To submit a request for interpretation of this Guideline, please send the following information to inquiries@csagroup.org and include “Request for interpretation” in the subject line:*
 - 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*
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Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at standardsactivities.csa.ca.
- 5) *This Guideline is subject to review five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include “Proposal for change” in the subject line:*
 - a) *designation (number);*
 - b) *relevant clause, table, and/or figure number;*
 - c) *wording of the proposed change; and*
 - d) *rationale for the change.*

Z94.3.1-16

Guideline for selection, use, and care of eye and face protectors

1 Introduction

This Guideline has been developed as a complementary document to CSA Z94.3. The purpose of this Guideline is to provide advice for the proper selection of eye and face protection in relation to the specific hazardous activity involved; not all hazards have been identified in this Guideline.

For eye and face protection to be effective, it must be properly selected for the job and fitted to the wearer.

Note: *CSA Z94.3 requires that prescription safety eyewear be fitted by a qualified professional (e.g., a licensed ophthalmic practitioner).*

The first choice in preventing eye injuries is to design work procedures and equipment so that workers are not exposed to eye hazards. However, the total elimination of eye hazards from the workplace is often not possible, and other measures must be taken to control residual hazards so that they do not result in injuries to workers and others in the work zone. One such control measure is the wearing of personal protective equipment (such as eye and face protectors). It is well recognized that the majority of eye injuries can be prevented by wearing appropriate protective eyewear and following basic safety rules.

Any well-designed eye and face protection program should be part of an effective occupational health and safety management system. Specifications for such a management system can be found in CAN/CSA-Z1000. This Guideline is based on the Plan–Do–Check–Act model of safety management, and it lays out the basis for proper management of personal protective equipment as a necessary strategy for injury and illness prevention.

Notes:

- 1) *As a first step to selection of proper eye protection, a hazard assessment/risk analysis of the workplace should be done to identify the hazard type(s).*
- 2) *Refer to Clause 13 of this Guideline for hazards and recommended protectors.*
- 3) *Refer to applicable provincial/federal occupational health and safety legislation.*

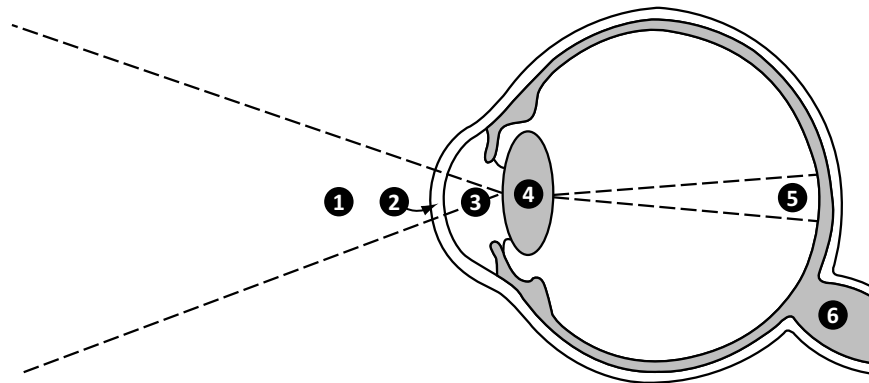
2 How the eye works

Note: The item numbers in this Clause correspond to the numbers shown in Figure 1.

A brief explanation of the functioning of the eye is described below:

- 1) light strikes an object in the field of vision and is reflected to the eye;
- 2) light passes through the cornea (transparent “front window” of the eye);
- 3) the pupil (the opening at the centre of the coloured iris) changes size to allow the correct amount of light through;
- 4) the crystalline lens focuses light rays onto the retina;
- 5) the retina (rear inner lining of the eye that contains light-sensitive cells) converts light into electrical signals; and
- 6) the optic nerve carries these signals to the brain, which combines the images from each eye into a single picture.

Figure 1
Functioning of the eye
 (See Clause 2.)



3 Compliant and certified eye and face protectors

3.1 General

Be careful, not all eyewear is safety eyewear!

There is a misconception that “impact resistance” implies compliance with the CSA Z94.3. For eye and face protectors to be considered compliant with CSA Z94.3, they must meet all the pertinent requirements listed in the Standard.

The manufacturer of the eye and face protector should have proper documentation showing that it is compliant. A certified eye and face protector should carry a mark or other identification of a nationally recognized certification organization. See Clause 4 of this Guideline for a description of compliance and certification markings for eye and face protectors.

Non-safety “dress” frames fall under an ophthalmic standard that has no relationship to protective safety eyewear.