International Standard

ISO 10256-3

Protective equipment for use in ice hockey —

Part 3: Face and eye protectors for skaters

Équipements de protection destinés à être utilisés en hockey sur glace —

Partie 3: Protections faciales et oculaires pour les patineurs

Second edition
2024-07

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ISO 10256-3:2024
https://standards.iteh.ai/catalog/standards/iso/3d60ef13-6b16-4746-ad7e-5e134fcba3c8/iso-10256-3-2024

Reference number
ISO 10256-3:2024(en)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 5, *Ice hockey equipment and facilities,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 158, *Head protection,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 10256-3:2016), which has been technically revised.

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The main changes are as follows:

— Clause 3 has been edited and re-ordered and new definitions have been added;

— Clause 4 has been revised;

— Clause 5 has been revised and clarified to reflect the changes in Clause 4;

— Clause 7 has been revised to include Ice Hockey designation;

— Clause 8 has been expanded to provide more information regarding assembly and use;

— Table 2 has been expanded and Table 3 has been added, to include the protocol and sequencing of all tests for the eye and face protectors;

— Figures 1, 2, 4, 6 and 7 have been revised for clarity and Figures 9 and 10 have been added.

A list of all parts in the ISO 10256 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Ice hockey is a high-speed, collision sport in which there is a risk of injury. By playing this sport, participants accept the risk of serious injury, paralysis, or death.

The intention of eye and face protectors is to reduce the frequency and severity of localized injuries to the eyes and face.

Protectors can consist of eye or face protectors worn in conjunction with an ice hockey head protector.

Two types of face protector and one type of eye protector are designated.

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Protective equipment for use in ice hockey —

Part 3:
Face and eye protectors for skaters

1 Scope

This document specifies performance requirements and test methods for eye and face protectors for use in ice hockey only.

This document is applicable to eye and face protectors worn by ice hockey players other than goalkeepers and by referees.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10256-1:2024, *Protective equipment for use in ice hockey — Part 1: General requirements*

ISO 10256-2:2024, *Protective equipment for use in ice hockey — Part 2: Head protectors for skaters*

EN 960:2006, *Headforms for use in the testing of protective helmets*

ISO 13468-2:2021, *Plastics — Determination of the total luminous transmittance of transparent materials*

ISO 14782:2021, *Plastics — Determination of haze for transparent materials*

CSA Z262.6-14, *Specifications for facially featured headforms*

ASTM D 2240-15, *Test Method for Rubber Property—Durometer Hardness*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10256-1:2024 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
eye protector
visor
device intended to reduce the risk of injury to the eyes of ice hockey participants

3.2
face protector
device intended to reduce the risk of injury to the eyes and face of ice hockey participants

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3.3
dioptre
measure of the power of a lens equal to the reciprocal of its focal length expressed in metres

3.4
field of vision
extent of vision through the *eye protector* (3.1) or *face protector* (3.2) in the "as worn" position

Note 1 to entry: See Figure 1.

3.5
combination
unit of an *eye protector* (3.1) or *face protector* (3.2) placed on a hockey head protector with which it is intended to be used

Note 1 to entry: The head protector shall be compliant with ISO 10256-2:2024.

3.6
fracturing
condition in which there is a complete separation of any part of the protector into pieces

3.7
chip
readily visible particle missing from the *eye protector* (3.1) or *face protector* (3.2) with an area > 9 mm^2

3.8
no-contact zone
designated zone of the headform in which contact is not permitted during the puck impact resistance test

Note 1 to entry: See Figure 4.

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3.9
crack
condition in which there is a break in the protector through the full thickness of the material without complete separation of parts

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3.10
luminous transmittance
ratio of the luminous flux (light) transmitted through the *eye protector* (3.1) or *face protector* (3.2) to the flux (light) incident upon it

3.11
haze
percentage of transmitted light that, in passing through the specimen, deviates from the incident beam by forward scattering

3.12
primary position of gaze
horizontal line running forward from the centre of the pupil parallel to the median plane

3.13
resolving power
resolution
ability of an optical system to distinguish two points at their minimum separation

3.14
prismatic power
measure of the angular change in direction of light rays passing through a prism expressed in prism *dioptres* (3.3)

Note 1 to entry: One prism dioptre equals a deviation of 1 cm per meter of path length of light.

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3.15
prismatic imbalance
situation in which the direction of light passing through a lens and entering one eye deviates from the direction of light passing through the lens and entering the other eye

3.16
model
category of protector with the same essential characteristics that can come in several sizes

Note 1 to entry: Essential characteristics include:

a) materials;

b) construction;

c) retention system;

d) protective padding.

3.17
helmet positioning index
HPI
vertical distance measured at the median plane, from the front edge of the head protector to the reference plane, when the head protector is placed on the reference headform

3.18
puck accelerator
device that can give a hockey puck a specific velocity, direction, with minimal rotation

Note 1 to entry: See Figure 8.

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3.19
optical quality test area
area on a transparent *eye protector* (3.1) or *face protector* (3.2) determined by the outline of a cone whose apex is centred on each pupil

Note 1 to entry: Its axis projects along the primary position of the gaze and extends 30° (radius of fixation) (see Figure 3), excluding an area 10 mm from the edge of the protector.

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3.20
glabella
g
most prominent midline point between the eyebrows

Note 1 to entry: See Figure 5 and Figure 7.

3.21
subnasale
Sn
deepest point on the concavity of the anterior surface of the maxilla in the midline within 3 mm of the floor of the nose

Note 1 to entry: See Figure 5 and Figure 7.

3.22
pupillary distance
distance between the circular opening in the eyes (pupils) of the referenced headform

Note 1 to entry: See Figure 10.

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4 Requirements

4.1 Types of eye or face protectors

The types of eye or face protectors shall be as follows:

— Type B1 — A face protector intended for use by persons other than goalkeepers.

— Type B2 — A face protector intended for use by persons ≤ 10 years of age, other than goalkeepers.

— Type C — An eye protector intended for use by persons ≥ 18 years of age, other than goalkeepers.

4.2 Ergonomics

ISO 10256-1:2024, 4.1 shall apply.

4.3 Innocuousness

4.3.1 Materials

ISO 10256-1:2024,4.2.1 shall apply.

4.3.2 Design

4.3.2.1 General requirements

ISO 10256-1:2024, 4.2.2 shall apply to all types.

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4.3.2.2 All types

4.3.2.2.1 Welded wire components

When inspected in accordance with 5.3.2.2, all wire ends shall terminate at the perimeter of the wire component.

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4.3.2.2.2 Obstruction of vision

When inspected in accordance with 5.3.2.2, and except for wires, there shall be no obstruction within the field of vision.

Dimensions of the wire shall meet the following requirements.

— The maximum dimension on the cross section shall be ≤ 6 mm.

— Where wires cross each other within the field of vision, the diagonal dimension shall be ≤ 8,5 mm.

4.3.2.2.3 Attachment fastening system and airway access

The attachment fastening system of an eye or face protector to a head protector shall be designed so that:

a) the eye or face protector can be attached to the head protector with the help of simple tools (e.g. screwdriver);

b) immediate access to the wearer's airway is possible without the use of tools and without moving the head.

Inspection shall be in accordance with 5.3.2.2.

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4.3.2.3 Types B1, B2

4.3.2.3.1 Maximum distance (headform to face protector)

When inspected in accordance with 5.3.2.3, the distance measured on the median plane and parallel to the basic plane between the inside of the face protector and points g and Sn on the facially featured headform shall not exceed 60 mm (see Figure 5).

4.3.2.3.2 Overlap

When inspected in accordance with 5.3.2.3, the face protector shall overlap the lower edge of the head protector (forehead area) by ≥ 6 mm when viewed perpendicular to the median and the mid-frontal planes.

4.3.2.3.3 Minimum load bearing area

The face protector shall have a minimum load-bearing area in the chin region as shown in Figure 6.

4.3.2.3.4 Maximum combined mass Type B2 with head protector

For type B2 face protectors, the combined mass of the face protector and head protector (with required hardware) shall be ≤ 0,9 kg.

4.3.2.4 Type C

4.3.2.4.1 Maximum distance (headform to eye protector)

When inspected in accordance with 5.3.2.4, the distance measured on the median plane, parallel to the basic plane between the inside of the eye protector and points g and Sn on the facially featured headform shall not exceed 60 mm (see Figure 7).

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4.3.2.4.2 Overlap

The eye protector shall overlap the lower edge of the eye or face protector (forehead area) by ≥ 6 mm when viewed perpendicular to the median and the mid-frontal planes.

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4.3.2.4.3 Maximum distance (head protector to eye protector)

The maximum distance between the head protector and the eye protector shall be ≤ 20 mm as shown in Figure 7.

4.4 Markings and information

ISO 10256-1:2024, 4.3 and Clauses 7 and 8 of this document shall apply.

4.5 Protected area

4.5.1 Type B1 and B2 — Face protectors

When tested in accordance with 5.5.1, the area protected by the face protector and head protector combination shall extend temporally and vertically around the headform at least to the continuous line G-HL-Z-HR-G (HR not shown) in Figure 5 as viewed perpendicular to the median and mid-frontal planes, when the face protector is assembled and mounted on the appropriate protector in accordance with the manufacturer's instructions and when placed and adjusted on a facially featured headform as described in 5.1.5.1 and 5.1.5.2.

Where the head protector provides protection in front of the line G-HL-Z-HR-G (HR not shown), the face protector does not need to extend back to the G-HL-Z-HR-G line (HR not shown), provided that the face

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