

INTERNATIONAL STANDARD

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10257

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Face protectors and visors for ice hockey players

Protecteurs de visage et visières pour joueurs de hockey sur glace



Reference number
ISO 10257:1996(E)

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.

Draft International Standards adopted by technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10257 pertaining to face protectors and visors for ice hockey players was prepared by Technical Committee ISO/TC 83, *Sports and recreational equipment*, Subcommittee SC 5, *Ice hockey equipment and facilities*.

It is the first International Standard for ice hockey face protectors and visors, and therefore, neither cancels nor supersedes any previous documents. It was developed primarily from face protector standards for ice hockey players previously published by the American Society of Testing and Materials (ASTM), the Canadian Standards Association (CSA) and the Swedish Ice Hockey Association (SIF).

Annexes A to D of this International Standard are for information only.

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Face protectors and visors for ice hockey players

1 Scope

This International Standard specifies the materials, finish, attachment system, and areas of facial coverage for face protectors and visors for ice hockey players. In addition, it specifies the impact, penetration and optical requirements and the test procedures for determining these requirements. The optical characteristics consist of tests for:

- a) peripheral field of vision and scotoma;
- b) optical quality of the field of vision;
- c) luminous transmittance;
- d) prism imbalance;
- e) haze; and
- f) optical clarity (definition).

This International Standard is applicable to face protectors and visors designed to protect the face, in whole or in part, of ice hockey players from the hazards likely to be encountered during a game. It covers requirements for the construction and finish of face protectors. Labelling and marking requirements are also included.

Note: *Hockey is a collision sport in which there is a risk of injury. This International Standard for the face protector and visor is intended for those used in ice hockey only and no other activity. Face protectors and visors afford no protection from neck or spinal injury. Severe head, brain or spinal injuries, including paralysis or death may occur even while using a face protector or visor in accordance with this International Standard.*

Protectors may consist of partial (eye) face protectors (visors) or full-face protectors, and cover the following three basic types:

- a) **Type 1 (full face)** — for players but not goal-tenders.
- b) **Type 2** — goal-tenders.
- c) **Type 3** — visors (for players, but not goal-tenders).

This International Standard includes performance tests covering the following:

- a) areas of facial coverage;
- b) penetration of objects to the face;
- c) impact; and
- d) optics.

Annex A describes more recent techniques for assessing optical quality using a laser beam and laboratory computer. Annex B describes methods for measuring peripheral fields of vision and scotoma. Annex C describes the apparatus and method for measuring coverage. Annex D is included in order to facilitate the procurement of the appropriate test equipment by certification laboratories throughout the world desiring to certify ice hockey face protectors and visors for international and other competitions.

This International Standard complements ISO 10256.

2 Normative references

The following Standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10256: 1996, *Protective helmets for ice hockey players*.

EN 960: 1994, *Headforms for use in testing of protective helmets*.

ASTM D1003-61: 1977, *Test method for haze and luminous transmittance of transparent plastics*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 chip: A macroscopic particle completely detached from the protector.

3.2 collimated light source (source of illumination): A quartz halogen lamp (1,68 foot candles or 17 lux) producing a 100 mm beam at 6 m distance which is centred on the pupils of the eyes of the headform or on the midpoint between the pupils of the eyes of the headform. This centring is maintained at all times during the test.

3.3 combination: The combined unit of a face protector or visor placed on a hockey helmet with which it is designed to be used.

3.4 computer interface: A linkage between the computer, the goniometer and the sensors. This enables a fully automated measurement process via a menu-driven operation.

3.5 optical clarity (definition): The sharpness of an image.

3.6 diopetre: A measure of the power of a lens or a prism equal to the reciprocal of its focal length expressed in metres.

3.7 face protector: A device intended to reduce the risk of injury to the eyes and face of ice hockey participants.

3.8 fields of vision: The projection outward of all retinal points (the nervous layer of the eye) at which visual sensations can be initiated.

3.8.1 temporally: Refers to an angle in the horizontal plane measured from the primary position of gaze to the right for the right eye and from the primary position of gaze to the left for the left eye.

3.8.2 nasally: Refers to an angle in the horizontal plane measured from the primary position of gaze to the left for the right eye and from the primary position of gaze to the right for the left eye.

3.8.3 inferior (downward): Refers to an angle in the vertical plane measured downwards from the horizontal.

3.8.4 superior (upward): Refers to an angle in the vertical plane measured upwards from the horizontal.

3.9 goniometer: Positioning device that moves the headform such that the angular rotation and movement in both the horizontal and vertical directions enables a spherical scan to be made of the fields of vision as seen through a face protector or visor.

3.10 glabella: The most prominent midline point between the eyebrows, identical to the bony glabella of the frontal bone.

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

3.12 interpupillary distance (PD): The distance in millimetres between the centres of the pupils of both eyes on the facially-featured headform.

Note: *Nominally PD adult = 58 mm, PD juvenile = 57 mm, PD child = 53 mm.*

3.13 laser: device used for alignment of the sensors. e.g. helium-neon (He-Ne) laser; 0,5 mW; monochromatic light source.

Note: *Observe safety rules when using a laser.*

3.14 lens: The transparent part of a protective device through which the wearer sees.

Note: *In this International Standard, a lens means a Zero Power Lens. This lens type does not incorporate a correction (non-Rx) and is commonly referred to as "Plano".*

3.15 luminous transmittance: The ratio of the light transmitted by a medium to the incident light.