INTERNATIONAL STANDARD

ISO 10256-1

First edition
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Protective equipment for use in ice hockey —

Part 1: General requirements

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

Partie 1: Exigences générales

Reference number
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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 83, *Sports and other recreational facilities and equipment*, Subcommittee SC 5, *Ice hockey equipment and facilities*.

This first edition of ISO 10256-1, together with ISO 10256-2, ISO 10256-3, ISO 10256-4, ISO 10256-5 and ISO 10256-6, cancels and replaces ISO 10256:2003, which has been technically revised.

ISO 10256 consists of the following parts, under the general title *Protective equipment for use in ice hockey*:

— *Part 1: General requirements*

— *Part 2: Head protection for skaters*

— *Part 3: Facial protectors for skaters*

— *Part 4: Head and face protection for goalkeepers*

— *Part 5: Neck laceration protectors for ice hockey players*

The following parts are under preparation:

— *Part 6: Lower leg protectors for ice hockey players*

Introduction

Ice hockey is a high speed, collision sport in which there is a risk of injury. The object of this part of ISO 10256 is to specify general requirements and to serve as the basis for particular standards for ice hockey, taking into account the risks inherent in participating in the sport, many of which cannot be eliminated by protective equipment. By playing this sport, participants accept the risk of serious injury, paralysis and/or death.

The intention of protective equipment for use in ice hockey is to reduce the frequency and severity of localized injuries to that part of the body for which the protector is intended. The protective function is intended to distribute and dampen the force of impact and to counteract the penetration of objects applied to the protector, and in the case of neck protectors, reduce the risk of lacerations. To achieve the performance of which it is capable, and to ensure stability while worn, the protective equipment need to be as closely fitting as possible, consistent with comfort. In use, it is essential that protectors are securely fastened, properly fitted and adjusted according to manufacturer's instructions.

SC 5 is aware that specifications for the performance of protective equipment are required in order to reduce the risk of injury in ice hockey. A goal of the subcommittee is to promote the use of better materials and/or constructions as they become available to meet the future requirements of the sport of ice hockey. SC 5 is also aware that in order to provide for comfort, correct fitting and use, and in accordance with the PPE Directive of the European Union (Council Directive 89/686/EEC), protective equipment intended for ice hockey need to be as light as practicable while providing appropriate performance characteristics that meet the demands of the sport. Proper education in the proper use and fitting of protective equipment is critical to its performance. Proper enforcement of the rules of play and consistent officiating are also essential for best performance of the protective equipment in reducing the risk of injury.

This part of ISO 10256 is to be used in conjunction with other collateral standards in the ISO 10256 series.

Protective equipment for use in ice hockey —

Part 1:
General requirements

1 Scope

This part of ISO 10256 specifies general requirements for head, face, neck and body protectors (hereafter referred to as protectors) for use in ice hockey.

This part of ISO 10256 is intended only for protectors used for ice hockey. Requirements are given for the following:

a) terms and definitions;

b) innocuousness;

c) ergonomics;

d) test report;

e) permanent markings;

f) information for users.

In the ISO 10256 series, collateral standards specify performance requirements for protectors for use in ice hockey and are intended to be read in conjunction with this part of ISO 10256.

NOTE 1 The requirements of a clause take precedence over a figure.

NOTE 2 The intent is to reduce the risk of injury to an ice hockey player without compromising the form or appeal of the game. These standards presume that the rules of play for ice hockey will be followed by players and enforced by officials.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
permanent marking
information that remains legible and cannot be removed in its entirety under conditions of normal use

2.2 planes

2.2.1
basic plane of the headform
plane relative to the headform that corresponds to the *basic plane of the human head* (2.2.2)

2.2.2
basic plane of the human head
plane that is located at the level of the external upper borders of the ear canal (external auditory meatus) and the inferior margins of the orbits of the eyes

2.2.3
horizontal plane
plane that passes across the body at right angles to both the frontal and *median plane* (2.2.4)

Note 1 to entry: See Figure 1.

2.2.4
median plane
vertical plane that passes through the headform from front to back and divides the headform into right and left halves

Note 1 to entry: See Figure 1.

2.2.5
mid-frontal plane
vertical plane that is perpendicular to the *median plane* (2.2.4) and the *reference plane* (2.2.6), and located mid-way between the front and rear extremities of the headform at the reference plane

Note 1 to entry: See Figure 1.

2.2.6
reference plane
construction plane parallel to the *basic plane of the headform* (2.2.1) at a distance from which it is a function of the size of the headform

3 Requirements

3.1 Innocuousness

3.1.1 The manufacturer shall provide written documentation to the notified body or test facility indicating that the materials used in the construction of the protector fulfil the requirements of 3.1.2 to 3.1.7.

3.1.2 Protectors shall meet a general requirement that the product is fit for its purpose. It shall be designed and manufactured to reduce the risk of injury when used according to the manufacturer's instructions. There shall be no hard or sharp edges, seams, buckles or other items on the surfaces of the products that could harm the user or other players during normal use.

NOTE The inherent risks of this high-speed collision sport are recognized in this context and players accept the risk that protective equipment cannot prevent all injuries.

Examination shall be made in accordance with 4.1 and Clause 5.

3.1.3 Construction materials and incorporated substances shall not harm those coming into contact with them. The manufacturer shall label any product containing substances or preparations generally known to be hazardous or which is known to be a skin irritant.

3.1.4 All materials used in the manufacture of protectors shall be known to be unaffected by ordinary household soap, cleaners recommended by the manufacturer and sweat. The manufacturer shall provide information on care cleaning and maintenance in its instructions.

3.1.5 Paints, glues and finishes used in manufacturing shall be compatible with the materials used in the construction of the protector. The manufacturer shall provide information regarding compatibility.

3.1.6 If adhesives are used in the protector, they shall not be of a formulation that will alter the chemical or physical properties of the protector materials to the extent as to reduce their protective qualities.

3.1.7 All materials used in the construction of the protector shall be resistant to irreversible polymeric changes when exposed to temperatures up to 70 °C or when exposed to ultraviolet radiation.

3.2 Ergonomics

Protectors for ice hockey players shall be designed and constructed so as to permit all normal playing movements and to minimize discomfort when they are used.

4 Test methods

4.1 Determination of innocuousness

The manufacturer's claim that the product satisfies this part of ISO 10256's requirements for innocuousness shall be supported by visual or manual inspection to locate any hard or sharp edges, seams, buckles or other items that might injure the user or another player during normal use.

Documents supplied by the manufacturer shall be examined to determine whether the claim that the materials are suitable for use in ice hockey protective clothing and equipment is justified. If the documents are considered inadequate, the product will not be tested. The results of the examination shall be recorded in the test report.

4.2 Determination of ergonomics

Manufacturers shall provide documentation in the product/certification file to support that the design and construction of the protector minimizes restriction and discomfort for all normal playing movements.

5 Tolerances

Unless otherwise specified, the implied tolerance of any dimension shall be ±2 %.

6 Conditioning requirements of protector samples

6.1 Ambient conditioning

The sample shall be exposed to a temperature of (20 ± 3) °C and a relative humidity not exceeding 50 % ± 10 % for not less than 4 h.

6.2 Low temperature conditioning

The sample shall be exposed to a temperature of (–25 ± 2) °C for not less than 4 h. Testing shall begin within 40 s of removal from the refrigeration chamber.

6.3 Elevated temperature conditioning

The sample shall be exposed to a temperature of (30 ± 2) °C for not less than 4 h. Testing shall begin within 40 s of removal from the heating chamber.

7 Test report

The test report shall include at least the following information:

a) the International Standards used for testing, e.g. ISO 10256-1 and ISO 10256-X;

b) the name or trademark of the manufacturer or the body taking responsibility for manufacture;