



Standard Specification for Throat Protective Equipment for Hockey Goaltenders¹

This standard is issued under the fixed designation F3165; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers performance requirements and test methods for throat protectors marketed, sold, and intended for ice hockey goalkeepers.

1.2 The intent of this specification is to reduce the risk of injury to the throat without compromising the form or appeal of the game. To do so, the protector shall be used:

1.2.1 As intended within the rules of the game and

1.2.2 In accordance with the manufacturer's instructions.

1.3 Ice hockey is a sport with intrinsic hazards associated with the normal conduct of the game. Participation in ice hockey implies the acceptance of some risk of injury. Use of a throat protector certified to this specification will not prevent all injuries.

1.4 This specification has been prepared after careful consideration of the frequency and mechanisms associated with throat injuries that can potentially occur within the rules of the game of ice hockey.

1.5 Requirements and the corresponding test methods, where appropriate, are given for the following:

1.5.1 Construction,

1.5.2 Puck impact resistance,

1.5.3 Coverage,

1.5.4 Marking and information.

1.6 Throat protection is intended for use by goalkeepers.

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

1.8 Although the intended primary application of this specification is stated in this scope, note that it remains the responsibility of the users of this specification to judge its suitability for their particular purpose.

1.9 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.10 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.11 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D2240 Test Method for Rubber Property—Durometer Hardness

2.2 *CSA Standards:*³

CSA Z262.6 Specifications for facially featured headforms

3. Terminology

3.1 *Definitions:*

3.1.1 *chip, n*—readily visible particle missing from the protector with an area bigger than 9mm².

3.1.2 *combination, n*—combined unit of a throat protector placed or attached on a hockey goaltender mask with which it is designed to be used.

3.1.3 *helmet positioning index, HPI, n*—vertical distance measured at the median plane, from the front edge of the goalie mask shell to the basic plane, when the goalie mask is placed on the reference headform.

3.1.4 *impact sites for testing throat protectors, n*—

3.1.4.1 *direct impact, n*—point in the intersection between the horizontal plane and the median plane in the direction of the center of the throat protector mid-point between top edge and bottom edge of the throat protector.

3.1.4.2 *25° impact, n*—point in the horizontal plane, 25° to the median plane, and in the direction of the axis formed by the

¹ This specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.15 on Ice Hockey.

Current edition approved May 1, 2022. Published June 2022. Originally approved in 2016. Last previous edition approved in 2016 as F3165 – 16. DOI: 10.1520/F3165-16R22.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Canadian Standards Association (CSA), 178 Rexdale Blvd., Toronto, ON M9W 1R3, Canada, http://www.csagroup.org.

intersection of the median plane and the frontal plane (see Fig. 1), aimed in the direction of the throat protector mid-point between top edge and bottom edge of the throat protector.

3.1.5 *permanent, n*—information that remains legible and cannot be removed in its entirety under conditions of normal use.

3.1.6 *planes, n*—

3.1.6.1 *basic plane of a headform, n*—plane relative to the headform that corresponds to the basic plane of the human head.

3.1.6.2 *basic plane of the human head, n*—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.

3.1.6.3 *frontal plane, n*—vertical plane that is perpendicular to the median and reference planes and passes through the top of the headform (see Fig. 2).

3.1.6.4 *horizontal plane, n*—any plane that passes across the head at right angles to both the frontal and median plane (see Fig. 2).

3.1.6.5 *median plane, n*—vertical plane that passes through the headform from front to back and divides the headform into right and left halves (see Fig. 2).

3.1.6.6 *reference plane, n*—construction plane parallel to the basic plane of the headform at a distance from it which is a function of the size of the headform.

3.1.7 *protector, n*—comprises a throat protector either specially adapted to the goaltender mask or forming a continuous unit designed to protect the whole or parts of the wearer's throat against injury.

3.1.8 *vertex, n*—point of intersection on the headform of the median plane with the frontal plane (see Fig. 2).

4. Requirements

4.1 Materials:

4.1.1 *Documentation*—The manufacturer shall provide written documentation indicating that the materials used in the construction of the throat protector fulfill the requirements of 4.1.2 – 4.1.6.

4.1.2 *Cleaners*—All materials used shall be known not to be adversely affected by ordinary household soap and cleaners as recommended by the manufacturer.

4.1.3 *Finishes*—Paints, glues, and finishes used in manufacturing shall be compatible with the materials used in the construction of the throat protector.

4.1.4 *Non-irritants*—Material coming in contact with the wearer shall not be of any type known to cause skin irritation

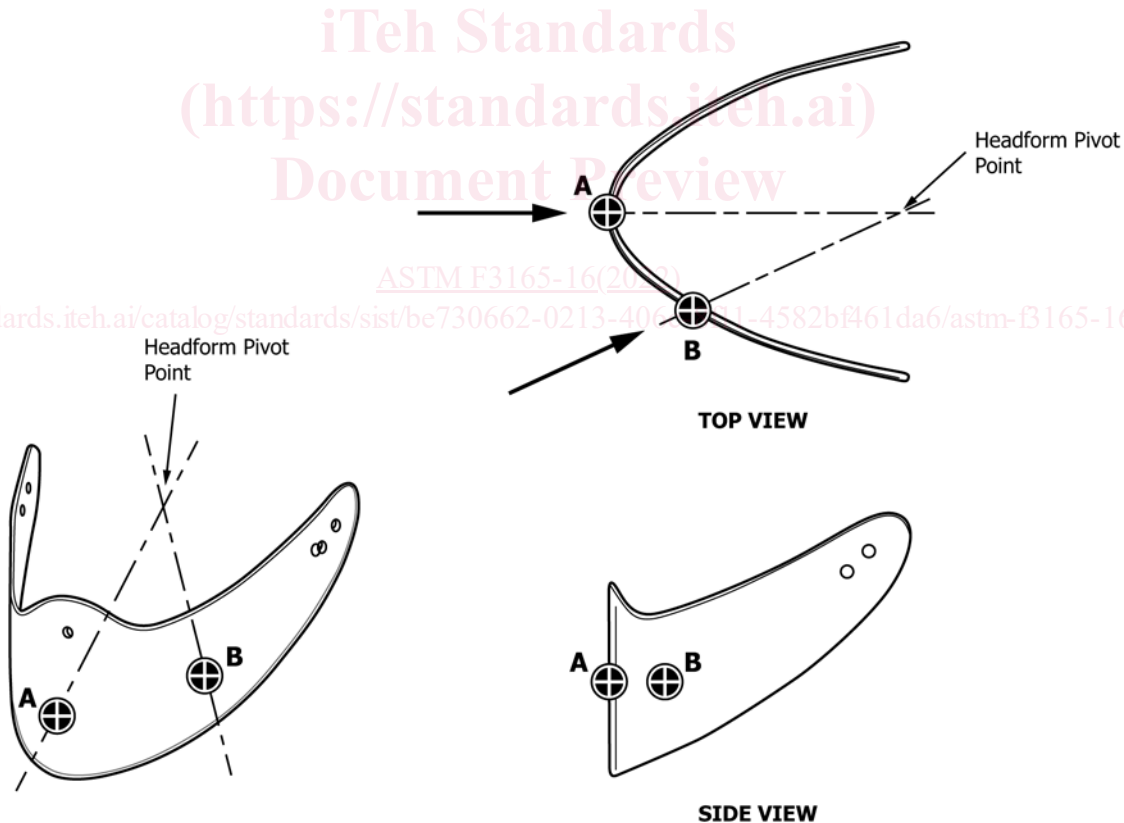


FIG. 1 Puck Impact Sites

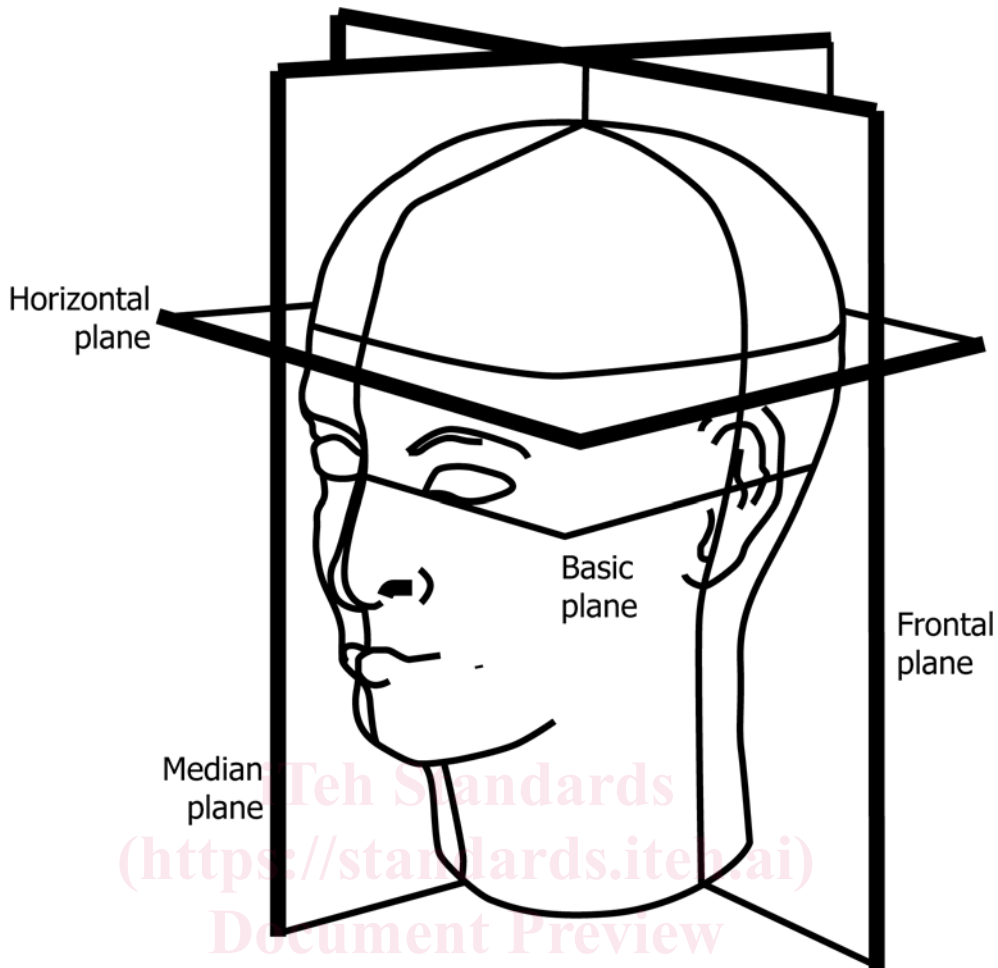


FIG. 2 Orientation Planes

[ASTM F3165-16\(2022\)](https://standards.iteh.ai/catalog/standards/sist/be730662-0213-406c-8f11-4582bf461da6/astm-f3165-162022)

<https://standards.iteh.ai/catalog/standards/sist/be730662-0213-406c-8f11-4582bf461da6/astm-f3165-162022>

or disease or undergo significant loss of strength, flexibility, or other physical changes as a result of contact with perspiration, oil, or grease.

4.1.5 *Adhesives*—Adhesive material used to attach padding or straps to the throat protector or visor shall be of a formulation that will not alter the chemical or physical properties of the materials to an extent so as to reduce their protective qualities.

4.1.6 *Polymeric Changes*—All materials used in the construction of the throat protector shall be resistant to irreversible polymeric changes when exposed to temperatures up to 70°C or ultraviolet radiation.

4.2 *Finish*—All parts shall be well finished and free of sharp edges and other irregularities that would present a potential hazard to the user or other players.

4.3 *Attachment System*—The attachment system of a throat protector to a goaltender’s mask shall be so designed so that the throat protector can be easily attached to the mask without requiring any machining operation by the user.

4.4 *Coverage and Openings:*

4.4.1 The extent of the coverage shall be so as to minimize exposure to potential injuries at impact but also as to not

interfere with other part of protective equipment, such as headgear and body padding.

4.4.2 If apertures are part of the design, no aperture shall have any dimension exceeding 38 mm. The aperture shall be completely surrounded by the protector. The distance from any edge of an aperture to any edge of the protector shall not be less than 20 mm.

4.5 *Puck Impact Resistance*—There shall be no breakage of the structural components of the throat protector or failure of the point of attachments to the goaltender mask. Cracking of surface coatings is permissible but chips (see 3.1.1) are not permitted.

4.6 *Design:*

4.6.1 *Overlap*—Throat protectors shall overlap the lower edge of the goaltender mask by at least 6 mm as viewed perpendicular to the median plane as shown in Fig. 3.

5. Test Methods

5.1 *Sampling:*

5.1.1 *Types*—Only new, throat protectors as offered for sale shall be tested. The protector shall be inspected visually and by hand before conditioning.

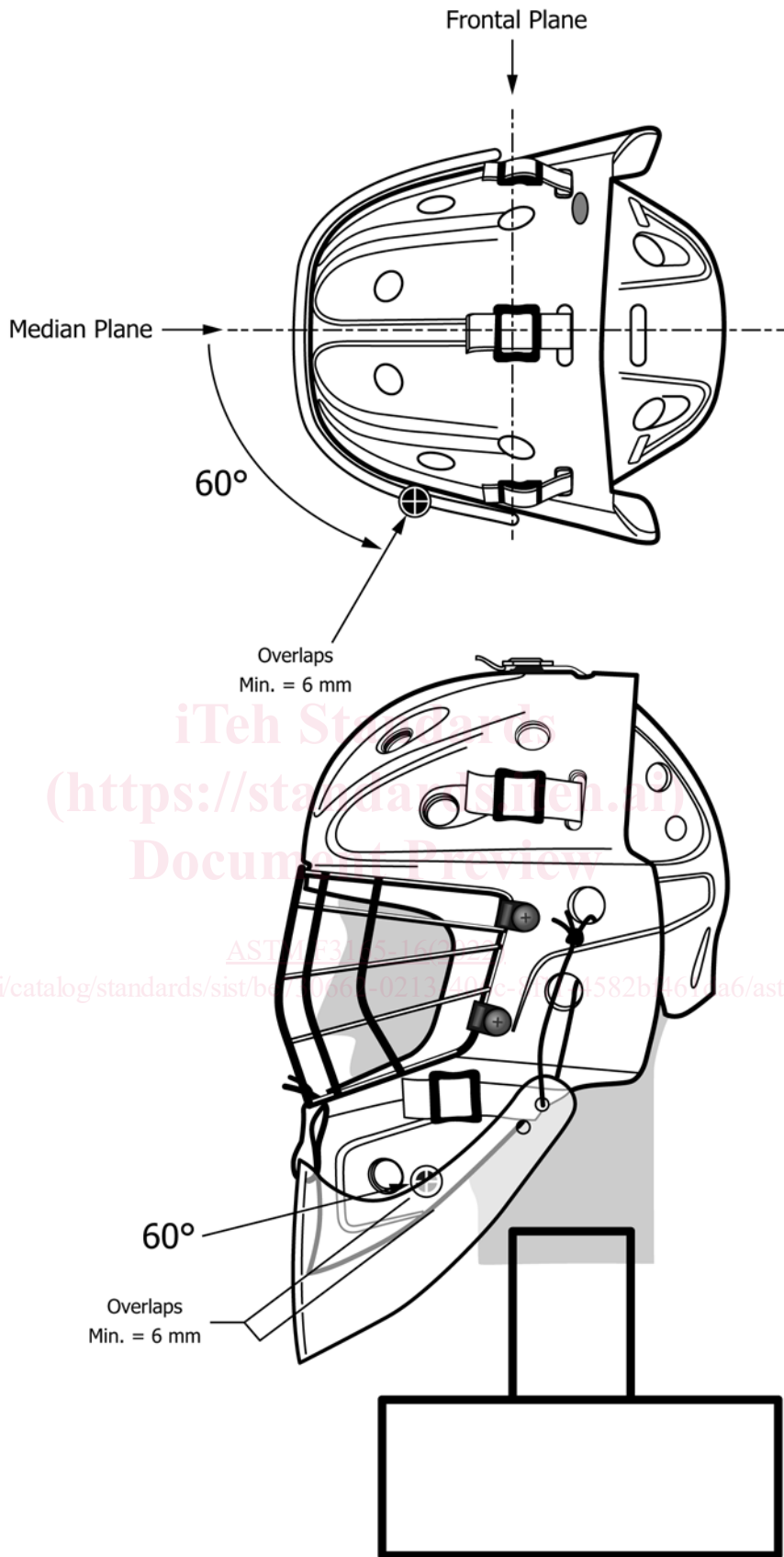


FIG. 3 Throat Protector Installation and Overlap