

DRAFT INTERNATIONAL STANDARD

ISO/DIS 16321-3

ISO/TC 94/SC 6

Secretariat: BSI

Voting begins on:
2018-05-18

Voting terminates on:
2018-08-10

Eye and face protection for occupational use —

Part 3:

Additional requirements for mesh protectors

Protection des yeux et du visage pour les loisirs —

Partie 3: Exigences complémentaires relatives aux protecteurs oculaires et faciaux de type grillage

ICS: 13.340.20

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/04b87399-deb4-401e-b7c7-7fb341c1ac51/iso-fdis-16321-3.2>

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING



Reference number
ISO/DIS 16321-3:2018(E)

© ISO 2018

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/04b87399-deb4-401e-b7c7-7fb341c1ac51/iso-fdis-16321-3.2>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	2
4.1 General	2
4.2 Headforms	2
4.3 Luminous transmittance of mesh protectors	2
4.4 Number of apertures in mesh protectors	2
4.5 Contact with metal parts of mesh protectors	3
4.6 Reflection from mesh protectors	3
4.7 Additional or alternative lenses	3
5 Marking of mesh protectors	3
5.1 General	3
5.2 Mandatory markings on mesh	3
5.3 Mandatory markings on frames	3
5.4 Optional markings on mesh	4
5.5 Optional markings on frames	4
5.6 Example of markings	4
6 Information to be supplied by the manufacturer	4
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Regulation 2016/425 aimed to be covered	6

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 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 6, *Eye and face protection*.

A list of all parts in the ISO 16321- series can be found on the ISO website.

Introduction

This family of documents was developed in response to the worldwide stakeholders' demand for minimum requirements and test methods for eye and face protectors traded internationally. ISO 4007 gives the terms and definitions for all the various product types. The test methods are in the ISO 18526-series, while the requirements for occupational eye and face protectors are in the ISO 16321-series. Eye protection for specific sports is mostly dealt with by the ISO 18527-series. A guidance document for the selection, use and maintenance of eye and face protectors is in preparation.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/04b87399-deb4-401e-b7c7-7fb341c1ac51/iso-fdis-16321-3.2>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/04b87399-deb4-401e-b7c7-7fb341c1ac51/iso-fdis-16321-3.2>

Eye and face protection for occupational use —

Part 3:

Additional requirements for mesh protectors

1 Scope

This document specifies additional material, design, performance and marking requirements for mesh protectors designed to provide protection for the eyes and faces of persons against mechanical hazards such as impacts from flying particles and fragments.

The other applicable requirements for mesh protectors and the frames/mountings to which they are intended to be fitted are given in ISO 16321-1.

This document is not applicable to protectors for use against liquid splash (including molten metal), hot solid risks, electrical hazards, infrared and ultraviolet radiation. For protection against these hazards suitable additional or alternative protectors according to ISO 16321-1 will be needed.

This document does not apply to mesh protectors used in sports such as fencing.

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 4007, *Eye and face protection — Vocabulary*

ISO 18526-1¹⁾, *Eye and face protection — Test methods — Part 1: Geometrical optical properties*

ISO 18526-2²⁾, *Eye and face protection — Test methods — Part 2: Physical optical properties*

ISO 18526-3³⁾, *Eye and face protection — Test methods — Part 3: Physical and mechanical properties*

ISO 18526-4⁴⁾, *Eye and face protection — Test methods — Part 4: Head forms*

ISO 16321-1⁵⁾, *Eye and face protection for occupational use — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4007 apply.

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

— IEC Electropedia: available at <http://www.electropedia.org/>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

1) Under preparation (Stage at the time of publication ISO/DIS 18526-1)

2) Under preparation (Stage at the time of publication ISO/DIS 18526-2)

3) Under preparation (Stage at the time of publication ISO/DIS 18526-3)

4) Under preparation (Stage at the time of publication ISO/DIS 18526-4)

5) Under preparation (Stage at the time of publication ISO/DIS 16321-1)

For the purposes of this document, “mesh protector” is used as a synonym for mesh visors and frames/mountings to which they are intended to be fitted.

4 Requirements

4.1 General

Only those requirements that are different from or supplement the ISO 16321-1 specifications are given in this document.

The following requirements from ISO 16321-1:— shall be met:

- Clause 4: General requirements for protectors;
- Clause 5.1: Field of view;
- Clause 7.1: Area to be protected;
- Clause 7.2: Headbands and harnesses;
- Clause 7.4: Basic Impact Level of complete protectors;
- Clause 7.5: Resistance to thermal exposure;
- Clause 7.7 Resistance to corrosion, where applicable;
- Clause 7.8 Resistance to ignition;
- Clause 7.9: Penetration of vents, where applicable;
- Clause 7.10: High-speed impact resistance, Impact Level C, D, E, optional;
- Clause 7.11: High mass impact, Impact Level HM, optional.

The additional requirements given in this document shall be met.

The mesh protectors described in this document are intended for use at normal ambient temperatures (23 ± 5) °C. Where critical aspects of protection are likely to be affected by temperatures towards the extremes of the normal range of occupational environments (from -5 °C to +55 °C), physical and mechanical requirements are included (sometimes optionally) to ensure performance is not compromised. Physical and mechanical requirements are provided for validation of claims for protection at extremes of temperature.

4.2 Headforms

Unless the manufacturer defines the headforms according to ISO 18526-4 that are compatible with the mesh protector, the test methods where headforms are required shall use the headform 1-M as the default headform.

4.3 Luminous transmittance of mesh protectors

The luminous transmittance of mesh providing the field of view shall be greater than 20,0 % when measured according to ISO 18526-2

NOTE The illuminant or source for this calculation is not specified since all will give the same result.

4.4 Number of apertures in mesh protectors

The minimum number of apertures in the mesh shall be 15 per cm² for mesh face shields and mesh goggles and 50 per cm² for spectacles.

Testing shall be done according to ISO 18526-3:—, 11.1.

4.5 Contact with metal parts of mesh protectors

When tested according to ISO 18526-3:—, 11.2, metal parts of the mesh protector shall not come into direct contact with the head/face of the wearer.

4.6 Reflection from mesh protectors

When tested according to ISO 18256-2:—, 13.3, the luminous reflectance, ρ_v , of the mesh surface on the eye side of the mesh protector shall not exceed 10 %.

4.7 Additional or alternative lenses

Additional or alternative lenses fitted to a mesh protector shall comply with ISO 16321-1. The additional or alternative lens shall meet or exceed the Impact Level requirements appropriate to the mesh protector to which it is fitted.

5 Marking of mesh protectors

5.1 General

When assessed by physical inspection (ISO 18526-3:—, Clause 8), all markings shall be clear and sufficiently durable to remain legible throughout the intended lifetime of the mesh protector.

The marking shall be fully visible when the complete mesh protector is assembled. The marking shall not encroach into the field of view. If the mesh and frame form a single unit, the complete marking shall be applied to the frame front or to the mesh.

For mesh protectors that claim compliance with this document, the marking shall show only those aspects that have been proved by testing as listed in ISO 16321-1: —, Table 18.

5.2 Mandatory markings on mesh

For mesh, the sequence of markings shall be:

- 1) Number of this document (i.e. 16321);
- 2) Manufacturer's identifying mark or manufacturer's trade mark;
- 3) Impact Level.

NOTE Specific national or regional regulations with regard to marking should be observed.

5.3 Mandatory markings on frames

For frames, the sequence of markings shall be:

- 1) Number of this document (i.e.16321);
- 2) Manufacturer's identifying mark or manufacturer's trade mark;
- 3) Impact Level;
- 4) Applicable head size.

If the manufacturer wants to add to the product marking the sizes that are compatible with the different headforms in ISO 18526-4, the following symbols shall be used: