

SLOVENSKI STANDARD

SIST EN 175:1998

01-april-1998

Oseбно varovanje - Oprema za varovanje oči in obraza pri varjenju in podobnih postopkih

Personal protection - Equipment for eye and face protection during welding and allied processes

Persönlicher Schutz - Geräte für Augen- und Gesichtsschutz beim Schweißen und bei verwandten Verfahren

Protection individuelle - Equipements de protection des yeux et du visage pour le soudage et les techniques connexes

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Ta slovenski standard je istoveten z: **EN 175:1997**

ICS:

13.340.20	Varovalna oprema za glavo	Head protective equipment
25.160.01	Varjenje, trdo in mehko spajkanje na splošno	Welding, brazing and soldering in general

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en

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EUROPEAN STANDARD

EN 175

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1997

ICS 13.340.20

Descriptors: welders (personnel), welding, accident prevention, personal protective equipment, eyes, safety, specifications, dimensions, human factors engineering, thermal properties, mechanical properties, flammability, electrical insulation, marking

English version

Personal protection - Equipment for eye and face protection during welding and allied processes

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This European Standard was approved by CEN on 1996-12-29. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 85 "Eye protective equipment", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement at the latest by January 1998, and conflicting national standards shall be withdrawn at the latest by January 1998.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this standard.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This European Standard specifies safety requirements and test methods for personal protective equipment used to protect the operator's eyes and face against harmful optical radiation and other specific risks or hazards in usual welding, cutting or similar operations. This standard specifies protection including ergonomic aspects against risks or hazards of radiative, flammable, mechanical and electrical nature. The equipment is designed to incorporate protective filters, with or without cover/backing oculars as recommended by the welding protector manufacturer, in accordance with EN 166:1995 and complying with EN 169:1992 or EN 379:1994.

Hoods, inspector face screens, laser protective equipment and welding protection for special applications, are not covered in this standard.

This standard defines the terms used and specifies requirements for materials, design and manufacture.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 165:1995	Personal eye-protection - Vocabulary
EN 166:1995	Personal eye-protection - Specifications
EN 168:1995	Personal eye-protection - Non-optical test methods
EN 169:1992	Personal eye-protection - Filters for welding and related techniques - Transmittance requirements and recommended utilisation
EN 379:1994	Specification for welding filters with switchable luminous transmittance and welding filters with dual luminous transmittance

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3 Definitions

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For the purposes of this standard, the definitions of EN 165:1995 apply together with the following :

3.1 welding protector

A device which provides protection to the wearer against harmful optical radiation and other specific risks generated by welding or allied processes.

NOTE : It may be a welding shield, a welding goggle or welding spectacles.

3.2 welder's face shield

A welder's shield worn on the head and in front of the face, usually secured in position by a harness to give protection to the eyes and face when fitted with the appropriate filter(s).

3.3 welder's hand shield

A welder's shield held in the hand to give protection to the eyes and face when fitted with the appropriate filter(s).

3.4 safety helmet mounted welder's face shield

A welder's shield mounted on a compatible safety helmet, that gives protection to the eyes and face when fitted with the appropriate filter(s).

3.5 welder's goggle

A device held in position usually by a headband, enclosing the orbital cavity into which radiation arising from welding operation can penetrate only through filter(s) and, where provided, filter cover(s).

3.6 welder's spectacles

A frame, with lateral protection, holding suitable filters in front of the eyes, to give them protection.

NOTE : It may usually be held in position with sidearms or a headband fitting.

3.7 harness

An assembly that provides a means of maintaining a welder's face shield in position on the head.

3.8 headband iTeh STANDARD PREVIEW (standards.iteh.ai)

That part of the harness to which the welder's face shield is fixed and which surrounds the head, or that part of the goggle or spectacle which secures the goggle or spectacle, onto the head.

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3.9 comfort band or sweat band

An accessory to cover at least the inner front surface of the headband to improve wearer comfort.

3.10 housing

The part of equipment that supports the filter(s), cover(s) and/or backing oculars.

3.11 backing ocular

A generally untinted ocular used mainly to protect the wearer from flying particles.

4 Design and manufacture

4.1 General construction

All welding protectors and component parts shall be free from projections, sharp edges or other defects which are likely to cause discomfort or injury to the user.

4.2 Field of vision

The field of vision shall not be obstructed except by the boundaries of the filter holders.

4.3 Materials

No parts of the welding protector which are in contact with the wearer shall be made of materials which are known to cause skin irritation.

4.4 Headbands

Headbands when used as the principal means of retention, shall be at least 10 mm wide.

4.5 Heat insulation

All metal fittings that are likely to be exposed to thermal radiation shall be, where applicable, insulated to protect the wearer from exposure to excessive heat.

4.6 Replacement

Filters and cover/backing oculars shall be readily replaceable by the wearer without use of special tools.

5 Requirements

5.1 General requirements

Welding protector housings shall provide at least the same protection against radiation as that given by the darkest filters declared usable by the manufacturer or supplier.

Ventilation, where provided, shall be such that the intended protection shall not be affected.

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5.2 Dimensions

5.2.1 Welder's spectacles and goggles

The dimensions of the visible aperture of the welding spectacles and goggles shall meet the requirements of 7.1.1 in EN 166:1995.

5.2.2 Welder's hand shields

Minimum height: 350 mm
Minimum width: 210 mm

When measured from the centre of the ocular the minimum depth shall not be less than 75 mm.

5.3 Area of coverage for welder's face shields and safety helmet mounted welder's face shields

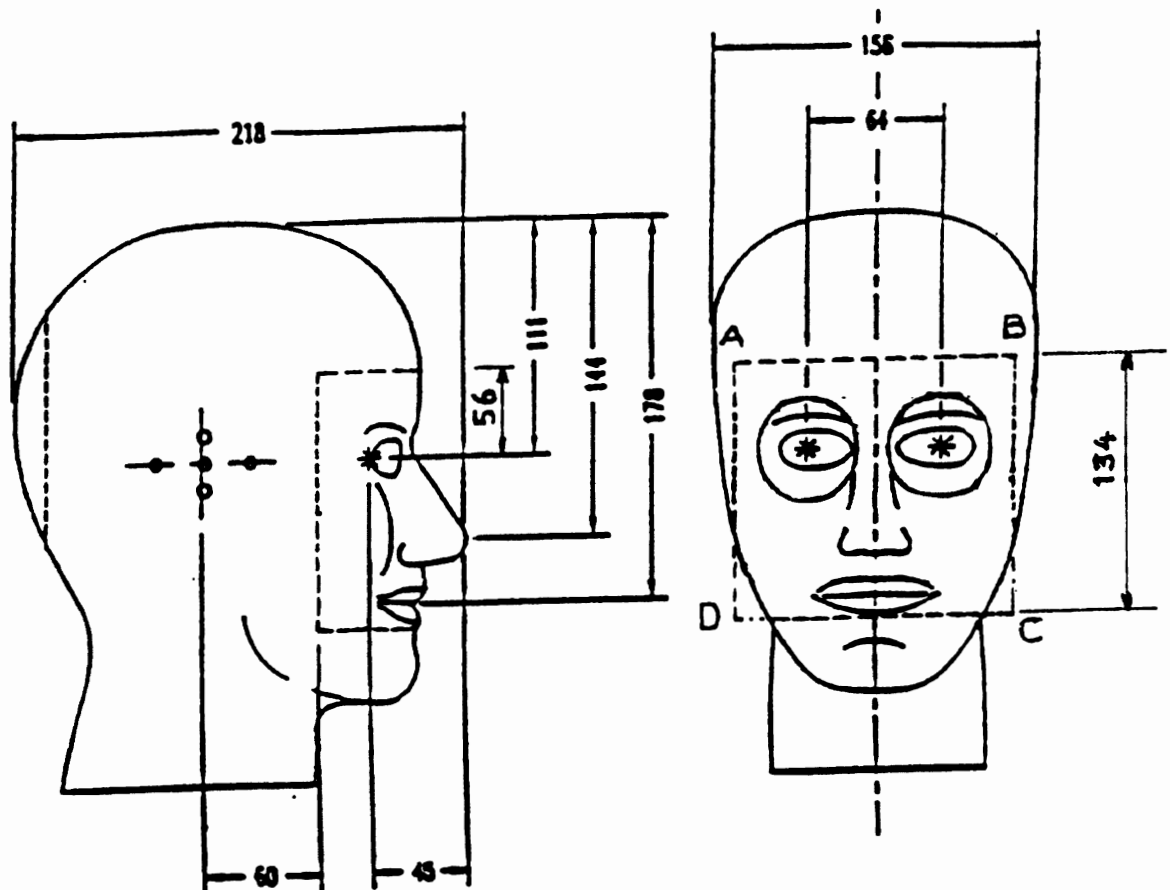
Welder's face shields and safety helmet mounted welder's shields shall cover the eye region rectangle (ABCD) of the headform in accordance with EN 168:1995 as defined in figure 1 and assessed in accordance with 8.1 of this standard.

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Dimensions in millimeters (nominal)



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Figure 1 : Reference headform

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5.4 Increased robustness of welder's face shields, goggles and spectacles

All welding protectors shall meet the requirements in 7.1.4.2.2 of EN 166:1995 when fitted with a filter meeting the increased robustness requirement. If the use of any cover and/or backing ocular(s) is recommended by the welding protector manufacturer in accordance with item (f) of clause 10 the test shall be done according to this recommendation.

NOTE : This does not imply that welding protectors during use always have to be equipped with cover and/or backing oculars or filters meeting the increased robustness requirement.

5.5 Resistance of welder's shields to damage when dropped

When tested in accordance with 8.2 the welder's shield shall show no apparent deformation, nor crack, break into two or more pieces or otherwise suffer permanent damage likely to affect performance. Also, the filter and cover/backing ocular(s) shall not suffer permanent damage likely to affect performance.

5.6 Light reflectance of welder's shields

All inside surfaces of the welder's shields shall be matt finish.

5.7 Light attenuation of welder's shields

When tested according to 8.4 no non-attenuated light shall be visible in any of the specified positions of the welder's shield.

5.8 Electrical insulation of welder's shields

When measured according to 8.3 the leakage current shall not be greater than 1,2 mA.

5.9 Resistance to ignition

All welding protectors shall meet the requirements of 7.1.7 in EN 166:1995.

5.10 Resistance of welder's shields to hot penetration

When tested in accordance with clause 7 of EN 168:1995, the hot rod shall not penetrate the welding protector within 5 s.

5.11 Resistance to corrosion

All welding protectors shall meet the requirements of 7.1.6 in EN 166:1995.

5.12 Suitability of cleaning and disinfection

All parts of welding protectors shall be capable of withstanding, without visible change, cleaning and disinfection in accordance with the manufacturer's recommended method.

5.13 Mass

5.13.1 Mass of welder's face shield

If the mass of a welder's face shield exceeds 450 g, when measured without oculars, then the shield shall be clearly marked with the actual mass in grams.