SLOVENSKI STANDARD
SIST EN 1938:1999

01-julij-1999

Osebno varovanje oči – Zaščitna očala za voznike in sovoznike motornih koles in mopedov

Personal eye protection - Goggles for motorcycle and moped users

Persönlicher Augenschutz - Schutzbrillen für Motorrad- und Mopedfahrer

Protection individuelle de l'oeil - Lunettes-masques pour utilisateurs de motocycles et de cyclomoteurs

Ta slovenski standard je istoveten z: **EN 1938:1998**

ICS:

13.340.20	Varovalna oprema za glavo	Head protective equipment
43.140	Motorna kolesa in mopedi	Motor cycles and mopeds

SIST EN 1938:1999 **en**

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Descriptors: personal protective equipment, accident prevention, eyes, motorcycles, mopeds, eyeglasses, safety masks, definitions, design, manufacturing, specifications, tests, consumer information, marking

English version

Personal eye protection - Goggles for motorcycle and moped users

Protection individuelle de l'oeil - Lunettes-masques pour utilisateurs de motocycles et de cyclomoteurs

Persönlicher Augenschutz - Schutzbrillen für Motorrad- und Mopedfahrer

This European Standard was approved by CEN on 20 September 1998.

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.

This European Standard exists 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.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents

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 April 1999, and conflicting national standards shall be withdrawn at the latest by April 1999.

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.

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.

1 Scope

This European Standard specifies requirements and test methods for goggles for motorcycle and moped users. This excludes goggles for motorcycle and moped users worn in off-road or competition use.

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 167:1995	Personal eye-protection - Optical test methods
EN 168:1995	Personal eye-protection - Non-optical test methods
EN 1836:1997	Personal eye-protection - Sunglasses and sunglare filters for general use

3 Definitions

For the purposes of this standard the definitions of EN 165:1995 and EN 1836:1997 apply.

4 Requirements

4.1 Design and manufacture

Goggles shall be free from projections, sharp edges or other defects which are likely to cause discomfort or injury during use.

4.2 Materials

Any materials (or combination of materials used for the design of the goggles) may be used, provided they meet the requirements of this standard.
No parts of the goggles which are in contact with the wearer shall be made of materials that are known to cause irritation, allergic or toxic reaction amongst a significant proportion of users.

4.3 Sit and fit

Goggles shall be so designed and manufactured that they can sit securely when used as intended and adapt to the shape of the wearer' s face by means of contact surfaces made of soft flexible material.

The retaining strap shall be designed to be flexible or adjustable and sit securely when fitted according to the manufacturer's instructions. The retaining strap shall be capable of withstanding any stress which occurs during proper use without tearing or being permanently deformed.

4.4 Ventilation

Design measures shall ensure that the inside of the goggles is well ventilated during use. Such measures shall be outside the oculars areas and shall not reduce the peripheral vision significantly.

4.5 Dimensions

The minimum aperture of the mounted oculars shall be such that an ellipse having the horizontal axis of 32 mm and vertical axis of 25 mm, can be described, in full for each eye according to figure 1.
The center distance d = c + (20 ± 0,5) mm, where c is pupillary distance. The pupillary distance is 64 mm, if not defined in a different way by the manufacturer.

Dimensions in millimetres

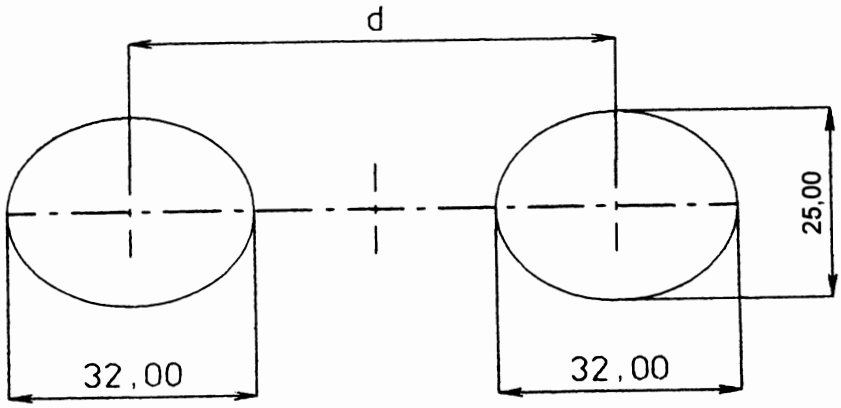

Figure 1

4.6 Optical requirements

4.6.1 Field of vision

When tested according to 5.1 and as illustrated on figure 2 the goggles shall have a field of vision with the following minimum values :

vertical : 55°;
horizontal : 150°.

4.6.2 Lens requirements

The lens requirements, other than those specified in 4.7 shall be as given in table 1.

Table 1: Requirements for lenses

Permissible tolerances for refractive powers of mounted oculars	Spherical refractive power $\frac{D1+D2}{2}$ D,m^{-1}	Astigmatic refractive power | D1 - D2 | D,m^{-1}	Difference in prismatic refractive power cm/m		
			Horizontal Base out	Horizontal Base in	Vertical
	± 0,12	0,12	1,00	0,25	0,25
Transmittance	According to 4.6.2.1				
Variation in luminous transmittance	According to 4.1.2.1 of EN 1836:1997				
Diffusion of light	Oculars Type A (single lens goggles): ≤ 1 cd/m²/lx Oculars Type B (multiple lens goggles): ≤ 2 cd/m²/lx				
Quality of material and surface	According to 4.4 of EN 1836:1997				
Recognition of signal lights	According to 4.1.2.2.2 of EN 1836:1997				
Spectral transmittance	According to 4.1.2.2.1 of EN 1836:1997				
Resistance to ultraviolet radiation	After the testing according to 5.5, the diffusion light shall not exceed the values shown in this table.				

4.6.2.1 Permissible transmittance and filter categories

Oculars for goggles for motorcycle and moped users are attributed to three categories. The range of the luminous transmittance of these three categories is given by the values in table 2. An overlap of the transmittance values of not more than ± 2 % (absolute) is permitted between the categories 0,1 and 2.

If the supplier declares a luminous transmittance value, the tolerance for the value is ± 3 % absolute for transmittance values.

When describing the transmittance properties of photochromic filters, two categories for transmittance values are generally used. These two values correspond to the faded state and to the darkened state of the filter.

In the case of gradient filters the transmittance value at the reference point is used to characterise the luminous transmittance / category of the oculars.

Table 2 specifies also the mandatory UV requirement of oculars for goggles for motorcycle and moped users.

Oculars for which enhanced infrared absorption is claimed, shall meet the requirements of the last column of table 2.

Table 2 : Permissible transmittance for oculars

Filter category	Mandatory requirements				
	Ultraviolet Spectral range			Visible Spectral range	Enhanced infrared absorption[1)]
	Maximum value of spectral transmittance $\tau(\lambda)$		Maximum value of solar UVA transmittance $\tau(\lambda)$	Range of luminous transmittance τ_V	Maximum value of solar infrared transmittance τ_{SIR}
	280 nm to 315 nm	315 nm to 350 nm	315 nm to 380 nm		
0	0,1 . τ_V	τ_V	τ_V	80% to 100%	τ_V
1	0,1 . τ_V	τ_V	τ_V	43% to 80%	τ_V
2	0,1 . τ_V	τ_V	τ_V	18% to 43%	τ_V

1) Only applicable to goggles recommended by the manufacturer as a protection against infrared radiation.

NOTE : Goggles with a luminous transmittance of less than 80% should be marked with “Not suitable for night driving”.

4.6.2.2 Special transmittance requirements and claimed transmittance properties

If the oculars have special transmittance requirements and/or claimed transmittance properties described in 4.1.3 and 4.1.4 of EN 1836:1997, the oculars shall satisfy the requirements described in each corresponding clause of EN 1836:1997.
In any case oculars shall have a luminous transmittance value superior or equal to 18%.

4.7 Non optical requirements

4.7.1 Impact resistance

The requirement is satisfied if the goggles withstand the impact of a steel ball, when tested in accordance with 5.6.

On so testing the following defects shall not occur:

a) Ocular fracture: An ocular shall be considered to have fractured if it cracks through its entire thickness into two or more pieces, or if the ball passes through the ocular;

b) Ocular deformation: An ocular shall be considered to have been deformed if a mark appears on the white paper on the opposite side to that struck by the ball;

c) Ocular housing or frame fracture: An ocular housing or frame shall be considered to have failed if it separates into two or more pieces, or if it is no longer capable of holding an ocular in position, or if an unbroken ocular detaches from the frame.