INTERNATIONAL STANDARD

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Road vehicles - Safety glasses - Test methods for optical properties

Véhicules routiers - Vitres de sécurité - Méthodes d'essai des propriétés optiques

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3538 was developed by Technical Committee ISO/TC 22, *Road vehicles*. This second edition contains the new clause 7, which was circulated, in March 1977, as amendment 1.

This amendment has been approved by the member bodies of the following countries :

Australia	ltaly	Romania
Austria	Japan	South Africa, Rep. of
Belgium	Korea, Dem. P. Rep. of	Spain
Brazil	Korea, Rep. of	Sweden
Canada	Mexico	Switzerland
Finland	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Poland	U.S.S.R.
Iran	Portugal	

The member body of the following country expressed disapproval of the amendment on technical grounds :

U.S.A.

This second edition cancels and replaces the first edition (i.e. ISO 3538-1975), which had been approved by the member bodies of the following countries :

Austria	Iran	Spain
Brazil	Israel	Sweden
Bulgaria	Italy	Switzerland
Canada	Netherlands	Turkey
Czechoslovakia	Poland	United Kingdom
Finland	Portugal	U.S.A.
France	Romania	Yugoslavia
Hungary	South Africa, Rep. of	

The member bodies of the following countries had expressed disapproval of the document on technical grounds :

Australia Belgium Germany

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Road vehicles – Safety glasses – Test methods for optical properties

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies optical test methods relating to the safety requirements for all safety glasses in a road vehicle, whatever the type of glass or other material of which they are composed.

2 REFERENCES

ISO 48, Vulcanized rubbers – Determination of hardness (Hardness between 30 and 85 IRHD).

ISO 3536/I, Road vehicles – Safety glasses – Vocabulary – Part I.

3 TEST CONDITIONS

Unless otherwise specified, the tests shall be carried out under the following conditions :

Temperature : 20 ± 5 °C

Pressure : 860 to 1 060 mbar *

Relative humidity : 60 ± 20 %

4 APPLICATION OF TESTS

For certain types of safety glass, it is not necessary to carry out all the tests specified in this International Standard, when the results, according to the purpose of testing, can be predicted with certainty from a knowledge of the properties of the safety glass concerned.

5 LIGHT TRANSMISSION TEST

5.1 Purpose of test

The purpose of this test is to determine whether the safety glass has a certain regular light transmittance.

5.2 Apparatus

5.2.1 Light source, consisting of an incandescent lamp, the filament of which is contained within a parallellepiped 1,5 mm \times 1,5 mm \times 3 mm. The voltage at the lamp terminals shall be such that the colour temperature is 2 856 ± 50 K. This voltage shall be stabilized within 1/1 000. The instrument used to check the voltage shall be of appropriate accuracy.

5.2.2 Optical system, consisting of a lens with a focal length f of at least 500 mm and corrected for chromatic aberrations. The clear aperture of the lens shall not exceed f/20. The distance between the lens and the light source shall be adjusted in order to obtain a light beam which is substantially parallel. A diaphragm shall be inserted to limit the diameter of the light beam to 7 ± 1 mm. This diaphragm shall be situated at a distance of 100 ± 50 mm from the lens on the side remote from the light source. The point of measurement shall be taken at the centre of the light beam.

5.2.3 Measuring equipment. The receiver shall have a relative spectral sensitivity in substantial agreement with the relative spectral luminous efficiency for the CIE^{1} standard photometric observer for photopic vision. The sensitive surface of the receiver shall be covered with a diffusing medium and shall have at least twice the cross-section of the light beam emitted by the optical system. If an integrating sphere is used, the aperture of the sphere shall be at least twice the cross-section of the beam.

The linearity of the receiver and the associated indicating instrument shall be equal to, or better than, 2% of the effective part of the scale.

The receiver shall be centred on the axis of the light beam.

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* 1 mbar = 100 Pa = 100 N/m²

1) International Commission on Illumination.