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**Road vehicles — Safety glazing
materials — Method for the determination
of solar transmittance**

*Véhicules routiers — Vitrages de sécurité — Méthode de détermination
du facteur de transmission du rayonnement solaire*



Reference number
ISO 13837:2008(E)

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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.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 13837 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 11, *Safety glazing materials*.

This corrected version of ISO 13837:2008 incorporates the following correction:

- Equation (B.4) on page 15 has been corrected.

Introduction

A review of existing standards and industry specifications and procedures reveals a lack of agreement with respect to the basis for defining and measuring the ultraviolet (UV), visible (VIS) and infrared (IR) transmittance properties of glazing materials. To avoid the continued preparation and promulgation of conflicting standards by individual entities, there is an interest in the automotive and glazing industries to harmonize on a worldwide basis the test procedures and protocol used to assess the solar transmittance properties of glazing materials.

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Road vehicles — Safety glazing materials — Method for the determination of solar transmittance

1 Scope

This International Standard specifies test methods to determine the direct and total solar transmittance of safety glazing materials for road vehicles. Two computational conventions (denoted convention “A” and convention “B”) are included, both of which are consistent with current international needs and practices.

This International Standard applies to monolithic or laminated, clear or tinted samples of safety glazing materials. Essentially flat sections of glazing parts can be used in this test, as well as flat samples of the same materials.

2 Normative references

The following referenced documents are indispensable for the application 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 9845-1:1992, *Solar energy — Reference solar spectral irradiance at the ground at different receiving conditions — Part 1: Direct normal and hemispherical solar irradiance for air mass 1,5*

CIE 85:1989, *Solar spectral irradiance*

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1

standardize

adjust an instrument output to correspond to a previously established calibration, using one or more homogeneous specimens or reference materials

3.1.2

transmittance

ratio of transmitted flux to incident flux, under specified geometric and spectral conditions

3.1.3

air mass (ratio)

ratio of the mass of atmosphere in the actual observer-sun path to the mass that would exist if the observer were at sea level, at standard barometric pressure, and the sun were directly overhead

3.1.4

solar indirect transmittance

fraction of the solar radiation absorbed by the safety glazing materials and reradiated to the interior

NOTE The fraction is the secondary heat transfer factor as defined in ISO 9050.