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Road vehicles — Safety glazing materials — Vocabulary

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National foreword

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Road vehicles — Safety glazing materials — Vocabulary

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Foreword

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The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 35, *Lighting and visibility*.

This third edition cancels and replaces the second edition (ISO 3536:1999), which has been technically revised.

Road vehicles — Safety glazing materials — Vocabulary

1 Scope

This International Standard defines terms relating to safety glazing materials for road vehicles.

2 Terms and definitions

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

2.1
safety glazing material
glazing material consisting of organic and/or inorganic materials so constructed or treated to minimize the likelihood of injury to persons as a result of contact with these safety glazing materials when used in a vehicle and which complies with specified requirements for visibility, strength, and durability

2.2
toughened safety glass
glazing material consisting of a single layer of glass which has been subjected to special thermal or chemical treatment to increase its mechanical strength and to condition its fragmentation after shatter

2.3
laminated safety glass
glazing material consisting of two or more layers of glass held together by one or more *interlayers* (2.4)

Note 1 to entry: The following two types are recognized:

— ordinary: when none of the layers of glass, of which it is composed, has been treated, i.e. normal annealed glass;

— treated: when at least one of the layers of glass, of which it is composed, is *toughened safety glass* (2.2) or glass which has been treated in any controlled process in order to give it increased resistance to mechanical and thermal stress.

2.4
interlayer
plastic material designed to be used to permanently bond together the component layers of *laminated safety glass* (2.3)

2.5
glass-plastic glazing material
glazing material which may comprise one layer of glass and one or more layers of plastic in which a plastic surface faces inward towards the vehicle passenger compartment when installed in the vehicle

2.6
plastic safety glazing material
safety glazing material (2.1) that contains, as an essential ingredient, one or more layers of organic polymeric substances

Note 1 to entry: The following two types are recognized:

— rigid plastic: organic polymeric material which maintains its structural stiffness over the intended use range;

— flexible plastic: organic polymeric material which remains conformable over the intended use range.

2.7
double glazed unit
assembly of two glazing materials permanently assembled in manufacture and separated by a uniform gap

Note 1 to entry: The following two types are recognized:

— symmetrical: where the two components are identical, e.g. both toughened glass;

— asymmetrical: where the two components are not identical, e.g. one unit is toughened glass and the other is laminated glass, or where the two components are not of the same thickness.

2.8
double window
assembly of two individual glazing materials separately installed within the same opening in the vehicle

2.9
safety glass faced with plastics
uniformly *toughened safety glass* (2.2) or *laminated safety glass* (2.3) with a layer of plastic on the inner side,

EXAMPLE The side facing towards the vehicle passenger compartment.

2.10
security glazing
type of glazing which gives a certain level of protection from manual attack from the outside of the vehicle

2.11
vision area
part of the installed *safety glazing material* (2.1) which shall satisfy special optical requirements and which is used in driving the vehicle

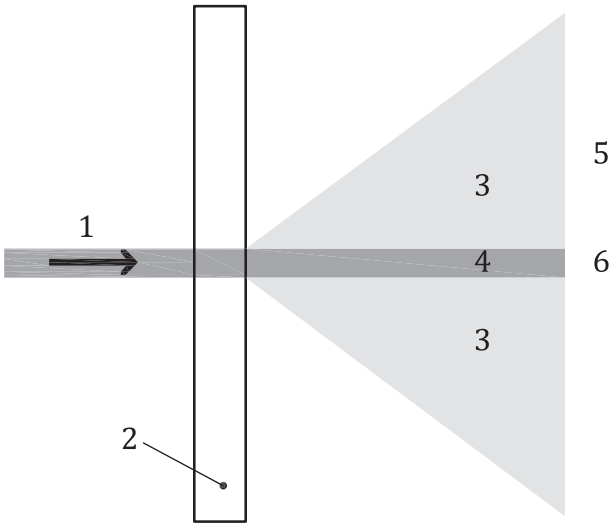
2.12
primary vision area
part of the *vision area* (2.11) immediately in front of the driver, through which pass the driver's principal directions of vision

2.13
optical deviation
angle of deviation
angle between the incident ray and the emergent ray refracted by the *safety glazing material* (2.1)

2.14
wedge
departure from parallelism of the surfaces of the *safety glazing material* (2.1) that may be inherent in the basic product or may result from techniques employed in producing the designed geometry

2.15
luminous transmittance
$T(\lambda)$
ratio of the transmitted luminous flux, F, which has passed through the glazing material to the incident luminous flux, F_0, normal (perpendicular) to the surface, either at a specified wavelength, λ, of light or for a specified illumination source:

$$T = F/F_0$$



Key

1 incident light beam with flux Φ_o

2 glazing sample

3 diffuse transmitted light

4 regular transmitted light

5 diffuse transmitted flux Φ_d; $T_d = \dfrac{\Phi_d}{\Phi_o}$

6 regular transmitted flux Φ_r; $T_r = \dfrac{\Phi_r}{\Phi_o}$

Note 1 to entry: The following two types are recognized:

— diffuse luminous transmittance, which is the ratio of transmitted diffuse (scattered) light flux to the incident flux;

— regular luminous transmittance, which is the ratio of transmitted non-diffuse (non-scattered) light flux to the incident flux.

2.16
secondary image
spurious or ghost image, visible near but dimmer than the primary image, usually seen at night when the object being viewed is very bright in relation to its surroundings

EXAMPLE The headlights of an approaching vehicle.

2.17
optical distortion
vehicle occupant's perception that, when looking through *safety glazing material* (2.1), outside objects appear to have an anomalous shape or objects in smooth motion appear to have an irregular motion

2.18
luminous reflectance
ratio of the reflected luminous flux to the incident luminous flux either at a specified wavelength, λ, of light or for a specified illumination source

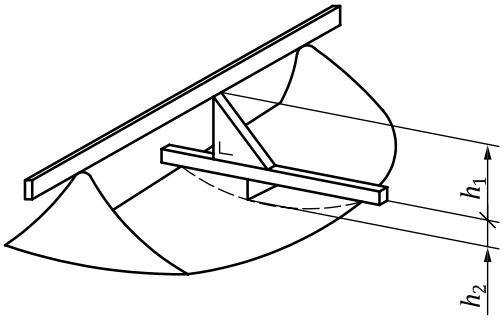
Note 1 to entry: See also 2.15.

2.19
bullet resistant glazing material
glazing material constructed to be resistant to firearms

2.20
design glazing outline
design maximum unobstructed vehicle aperture designated to be glazed, before the glazing material is installed or mounted, including all trims, but excluding opaque obscuration

2.21
height of segment "h"
maximum distance, measured at right angles to the glazing material, separating the inner surface of the glazing material from a plane passing through the ends of the glazing material

height of segment "h" = $h_{1\text{maximum}} + h_{2\text{maximum}}$



2.22
curved pane
pane (2.32) with a *height of segment "h"* (2.21) greater than 10 mm per linear metre

2.23
flat pane
pane (2.32) with a *height of segment "h"* (2.21) equal to or less than 10 mm per linear metre

2.24
radius of curvature "r"
smallest radius of arc of the glazing material as measured in the most curved area

2.25
rake (installation) angle
angle between a vertical line and a straight line passing through the top and bottom edges of the inner side of the glazing material, when both lines are contained in the vertical plane through the longitudinal axis of the vehicle

2.26
test specimen
test piece
sample or a finished product of glazing material

2.27
shade band
portion of the glazing material with a reduced light transmission, whether solid tint or dot printed, to reduce solar glare for occupant comfort

2.28
opaque obscuration
portion of the glazing material preventing light transmission along the glazing periphery to prevent degradation of the attaching adhesive and to mask that adhesive and underlying body components or around the position of the interior rear-view mirror to mask the mirror base or parts of any underlying sensors or other elements

2.29
transparent area of the windscreen
glazing area contained within the design glass outline, excluding any allowed *opaque obscuration* (2.28), but including any *shade band* (2.27)

2.30
head injury criteria
HIC
calculation of the injury level which result from a blunt perpendicular impact with the glazing material

2.31
windscreen
glazing in front of the driver through which the driver views the road ahead

2.32
pane
any single piece of glazing other than *windscreen* (2.31), to the exclusion however of glazing for lighting and light-signalling devices and instrument panels

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Price group A

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