

ISO ~~DIS~~ 22897:2023(E)

ISO/TC 160

Secretariat: BSI

Glass in building — Glazing and airborne sound insulation — Product descriptions, determination of properties and extension rules

Verre dans la construction — Vitrages et isolement acoustique — Descriptions de produits, détermination des propriétés et règles d'extension

Second edition

Date: 2023-04-24 10-27

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 160, *Glass in building*.

This second edition cancels and replaces the first edition (ISO 22897:2003), which has been technically revised.

The main changes are as follows:

- the calibration procedure has been removed and reference is now made to ISO 10140-1:2016, Annex D;
- ~~the~~ extension rules have been expanded;
- ~~the table~~ **Table 1** with typical performance data has been extended;
- ~~an annex (Annex A)~~ on the characterization of **PVBpolyvinyl butyral** interlayers has been added.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Glass in building — Glazing and airborne sound insulation — Product descriptions, determination of properties and extension rules

1 Scope

This document ~~established the determination and assessment of~~ establishes a method to determine and assess sound insulation performances of all transparent, translucent and opaque glass products, for basic, special basic or processed glass products, when intended to be used in glazed assemblies in buildings, and which exhibit properties of acoustic protection, either as a prime ~~intention or as a~~ supplementary characteristic.

This document refers to laboratory measurement method described in ISO 10140-1:2016, Annex D and defines extension rules that can be applied without further testing. It also provides typical performance data for a range of common glass products that can be used in the absence of measured data.

All the considerations of this document relate to panes of glass ~~or~~ glass products alone. Incorporation of them into windows can cause changes in acoustic performance as a result of other influences, e.g. frame design, frame material, glazing material ~~or~~ method, mounting method, air tightness, ~~etc.~~ Measurements of the sound insulation of complete windows (glass and frame) ~~may~~ can be undertaken to resolve such issues.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 10140 (all parts), Acoustics — Laboratory measurement of sound insulation of building elements

ISO 717-1, Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation

ISO 10140-1, Acoustics — Laboratory measurement of sound insulation of building elements — Part 1: Application rules for specific products

ISO 16940, Glass in 10140-2, Acoustics — Laboratory measurement of sound insulation of building — Glazing and elements — Part 2: Measurement of airborne sound insulation — Measurement of the mechanical impedance of laminated glass

ISO 10140-3, Acoustics — Laboratory measurement of sound insulation of building elements — Part 3: Measurement of impact sound insulation

ISO 10140-4, Acoustics — Laboratory measurement of sound insulation of building elements — Part 4: Measurement procedures and requirements

ISO 10140-5, Acoustics — Laboratory measurement of sound insulation of building elements — Part 5: Requirements for test facilities and equipment

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO ~~717-1, ISO 10140~~ (all parts), ~~ISO 717-1~~) and the following apply.

ISO and IEC maintain ~~terminological~~terminology databases for use in standardization at the following addresses:

~~— IEC Electropedia: available at~~ — ISO Online browsing platform: available at <https://www.iso.org/obp>

~~— IEC Electropedia: available at~~ <https://www.electropedia.org/>

3.1 glass product

product manufactured from glass, i.e. basic glass, special basic glass, processed glass, for use in buildings ~~and~~ constructions

3.2 monolithic glass

single pane of glass, that includes annealed, strengthened ~~or~~ toughened (by heat or chemical treatment), and coated glasses

Note 1 to entry: ~~The~~This term "~~monolithic~~" excludes *laminated glass* (3.4) and *laminated safety glass* (3.5)

3.3 insulating glass unit IGU

assembly consisting of at least two panes of glass, separated by one or more spacers, hermetically sealed along the periphery, mechanically stable and durable

3.4 laminated glass

assembly consisting of one sheet of glass with one or more sheets of glass and/or plastics glazing sheet material joined together with one or more *interlayers* (3.6)

[SOURCE: ISO 12543-1:2022]2021, 3.1.1, modified — Note 1 to entry has been deleted.]

3.5 laminated safety glass

laminated glass (3.4) classified in accordance with a soft body impact standard where in the case of breakage the *interlayer* (3.6) serves to retain the glass fragments, limits the size of opening, offers residual resistance and reduces the risk of cutting or piercing injuries

[SOURCE: ISO 12543-1:2022]

Note 1 to entry: In this document, the expression "laminated glass" covers both laminated glass and laminated safety glass.

[SOURCE: ISO 12543-1:2021, 3.1.2, modified — Note 1 to entry has been replaced.]

3.6 interlayer

one or more layer or material acting as an adhesive and separator between panes of glass and/or plastics glazing sheet material