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ISO 12543-2

Third edition
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Glass in building — Laminated glass and laminated safety glass —

Part 2: Laminated safety glass

Verre dans la construction — Verre feuilleté et verre feuilleté de sécurité —
Partie 2: Verre feuilleté de sécurité

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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 documents 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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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,* Subcommittee SC 1, *Product considerations,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 129, *Glass in building,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 12543-2:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

— editorial changes have been made;

— definitions have been moved to ISO 12543-1;

— the clause on high temperature tests has been revised.

A list of all parts in the ISO 12543 series can be found on the ISO website.

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 — Laminated glass and laminated safety glass —

Part 2: Laminated safety glass

1 Scope

This document specifies performance requirements for laminated safety glass as defined in ISO 12543-1.

NOTE Any defects that are found in installed laminated safety glass are dealt with in ISO 12543-6.

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 12543-1, *Glass in building — Laminated glass and laminated safety glass — Part 1: Definitions and description of component parts*

ISO 12543-4:2021, *Glass in building — Laminated glass and laminated safety glass — Part 4: Test methods for durability*

ISO 12543-5, *Glass in building — Laminated glass and laminated safety glass — Part 5: Dimensions and edge finishing*

ISO 12543-6, *Glass in building — Laminated glass and laminated safety glass — Part 6: Appearance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12543-1 apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

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

4 Impact resistance

Laminated safety glass is distinguished from laminated glass by its performance under a pendulum impact test and its subsequent classification.

NOTE Two test methods for pendulum impact testing are detailed in ISO 29584.

Depending on the regulation in force in the country of installation, different pendulum impact test methods can be applicable.

5 Durability of laminated safety glass

5.1 High-temperature tests

5.1.1 General

Laminated safety glass shall be tested in accordance with 5.1.2.

A manufacturer can choose to test laminated safety glass in accordance with 5.1.3 instead of 5.1.2.

A successful test according to 5.1.3 also fulfils the requirements for a test according to 5.1.2. In case of an unsuccessful test according to 5.1.3 the laminated safety glass shall be tested according to 5.1.2.

The durability of laminated safety glass is dependent upon the following factors:

— interlayer type;

— presence of plastic glazing sheet materials;

— presence of encapsulated materials;

— the environment under which the laminated safety glass is installed.

The manufacturer's choice of test method may depend upon the above-mentioned factors.

There may be cases where the high temperature test is applied to assess the suitability of a production process, for example, for the lamination of larger sizes of heat-treated components. In these cases, the number of permissible bubbles and delamination should be agreed individually.

5.1.2 Short high temperature test

Laminated safety glass shall be tested in accordance with ISO 12543-4:2021, 5.3.2, and evaluated in accordance with ISO 12543-4:2021, 5.4. No fault (i.e. bubbles, delamination, haze or cloudiness) shall be found in three test specimens.

If faults are found in only one test specimen, three new test specimens shall be tested in accordance with ISO 12543-4:2021, 5.3.2, and evaluated in accordance with ISO 12543-4:2021, 5.4. No fault shall be found in any of these three test specimens.

5.1.3 Long high temperature test

Laminated safety glass shall be tested in accordance with ISO 12543-4:2021, 5.3.3, and evaluated in accordance with ISO 12543-4:2021, 5.4. No fault (i.e. bubbles, delamination, haze or cloudiness) shall be found in three test specimens.

If faults are found in only one test specimen, three new test specimens shall be tested in accordance with ISO 12543-4:2021, 5.3.3, and evaluated in accordance with ISO 12543-4:2021, 5.4. No fault shall be found in any of these three test specimens.

5.2 Humidity test

Laminated safety glass shall be tested in accordance with ISO 12543-4:2021, 6.3.1, and evaluated in accordance with ISO 12543-4:2021, 6.4. No fault (i.e. bubbles, delamination, haze or cloudiness) shall be found in three test specimens.

If faults are found in only one test specimen, three new test specimens shall be tested in accordance with ISO 12543-4:2021, 6.3.1, and evaluated in accordance with ISO 12543-4:2021, 6.4. No fault shall be found in any of these three test specimens.