
Windows and doors — Resistance to wind load — Test method

Fenêtres et portes — Résistance au vent — Méthode d'essai





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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 162, *Doors, windows and curtain walling*.

This second edition cancels and replaces the first edition (ISO 6612:1980), which has been technically revised.

The main changes are as follows:

- pedestrian door sets have been added to the scope;
- the title has been revised;
- this document has been adapted to the current state of the art using Reference [1];
- the technical content has been precised.

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.

Windows and doors — Resistance to wind load — Test method

1 Scope

This document specifies test method to determine the resistance to wind load of completely assembled windows and pedestrian door sets of any materials when exposed to positive or negative test pressures.

This test method is designed to take account of conditions in use, when the window or door set is installed in accordance with the manufacture's specification and the requirements of relevant International Standards and codes of practice.

This document does not apply to joints between the window or door frame and the building construction.

This document is not intended to evaluate strength of the glass.

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 6613, *Windows and doors — Air permeability — Test method*

ISO 22496, *Windows and pedestrian doors — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22496 and the following 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/>

3.1

closed

closing condition where movable parts rest in or at the fixed parts in a way in which the movable parts can be *fastened* (3.2) [*latched* (3.3) and/or *locked* (3.4)]

3.2

fastened

closing condition where the movable part is restrained at one or more points by latching and/or locking

3.3

latched

fastened (3.2) condition where the movable part is returned to its *closed* (3.1) position and restrained

Note 1 to entry: The movable part is restrained by either:

- a) a self-engaging fastener, or
- b) a roller catch, or
- c) a latch.

3.4 locked

fastened (3.2) condition where the movable part is further restrained in the *closed* (3.1) position by additional operations to engage integrated locking devices which affect the product's characteristics

Note 1 to entry: The restraining in the closed position is done by additional operations of, for example, handle, key, automatic devices or electronic devices.

Note 2 to entry: Integrated locking devices are, for example, nut bolts or deadbolts.

3.5 frontal displacement

movement of a point on a frame member measured normal to the member

3.6 frontal deflection

maximum *frontal displacement* (3.5) of a frame member minus half the sum of the frontal displacements at each end of the member

3.7 relative frontal deflection

frontal deflection (3.6) of a frame member divided by the length of the member over which the frontal deflection was measured

Note 1 to entry: The length of the member over which the frontal deflection was measured is for example, the distance between the ends of the member.

3.8 test pressure

difference between the static air pressures inside and outside of the test chamber

Note 1 to entry: The test pressure is positive if the static air pressure inside the chamber of the test apparatus is higher than that outside the test chamber.

Note 2 to entry: The test pressure is negative if the static air pressure inside the chamber of the test apparatus is lower than that outside the test chamber.

Note 3 to entry: The intended "outside" of the specimen shall be facing to the side, from where the positive pressure is applied.

For the purpose of these tests, three sets of test pressure are defined:

- P_1 applied to measure deflections of parts of the test specimen;
- P_2 pulsating pressure applied for 50 cycles to assess performance under repeated wind loads;
- P_3 applied to assess the safety of the test specimen under extreme conditions.

The relation of P_1 , P_2 and P_3 shall conform to the clients' needs or, as a default, use $P_2 = 0,5 \times P_1$ and $P_3 = 1,5 \times P_1$.

4 Principles of test

The test consists of the application of a defined series of pressures (positive and negative) at which measurements and inspections are made to assess relative frontal deflection and resistance to damage from wind loads.

5 Test apparatus

5.1 A chamber with an open side to which the test specimen can be fitted. It shall be constructed so as to be able to withstand the test pressures without deflecting to an extent likely to influence the test results.