
**Hinged or pivoted doors —
Determination of the resistance to
vertical load**

Portes battantes ou pivotantes — Détermination de la résistance à la charge verticale

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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 8275:1985), which has been technically revised.

The main changes are as follows:

- vertically pivoted doors have been added to the scope;
- the title has been updated;
- 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.

Hinged or pivoted doors — Determination of the resistance to vertical load

1 Scope

This document specifies the method to be used to determine the permanent deformation caused when a vertical load is applied to an open door leaf fixed in its own door frame as part of a door set.

This document applies to all vertically hinged or pivoted doors.

The method can also be used with respect to a door leaf submitted for test in a frame, which the manufacturer considers appropriate to and typical for the intended utilization.

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 22496, *Windows and pedestrian doors — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22496 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 General

Downward forces that can reasonably be expected, such as a child swinging on the handle, should neither damage nor impair the performance of a door.

For manufacturers of door leaves whose products are not sold as part of a known door set, provision is made for claiming conformance with the relevant requirements by the testing of such door leaves in a typical frame. Nevertheless, the fact that a particular door leaf meets with the relevant requirements in this way does not necessarily mean that a door assembly incorporating that door leaf will meet the requirements.

5 Test apparatus

5.1 Test surround

The surround in which the test specimen is tested, which shall be sufficiently rigid to withstand the test load without deflecting to an extent likely to influence the test result.

5.2 Loading equipment

A suitable device with weights or a controlled and calibrated ram, accurate to 2 %.

5.3 Measuring equipment

The measuring equipment shall be accurate to 0,1 mm.

6 Test specimens

Test specimens shall be stored and tested in a non-destructive environment within the ranges of 15 °C to 30 °C and 25 % to 75 % relative humidity.

Doors which are designed to be glazed, shall be supplied for testing with all glazing carried out in accordance with the door manufacturer's specifications.

7 Procedure

Without any vertical restraint, position the door leaf at an angle of $(90 \pm 5)^\circ$ to the plane of the frame.

Measure diagonal '*D*' of the door leaf to the nearest 1 mm (see [Figure 1](#)).

To take up any slack in the hinges, apply a preload of (200 ± 4) N vertically to the top of the lock-side corner of the door leaf, (50 ± 5) mm from the opening edge, and maintain this load for (60 ± 5) s. Remove the load and after (60 ± 5) s measure the location of the lower corner of the door leaf to the nearest 0,1 mm (see [Figure 1](#)).

To the same loading point, apply a static load *F* and maintain for (300 ± 5) s. Measure the maximum deformation under load to the nearest 0,1 mm. Remove the load and after (180 ± 5) s repeat the measurement at the lower corner of the door leaf, and measurement of the diagonal '*D*'.

All loads shall be carefully applied and removed in increments of maximum 100 N, accurate to 2 %, and over a minimum of 1 s for each increment or the equivalent rate, if continuous, in order to avoid dynamic effects.

8 Expression of results

Record:

- the deformation under load *F* and the residual deformation of the door set in the vertical plane;
- the residual deformation of the door leaf, as expressed by the difference in the measurements of the diagonal '*D*' before and after the test.

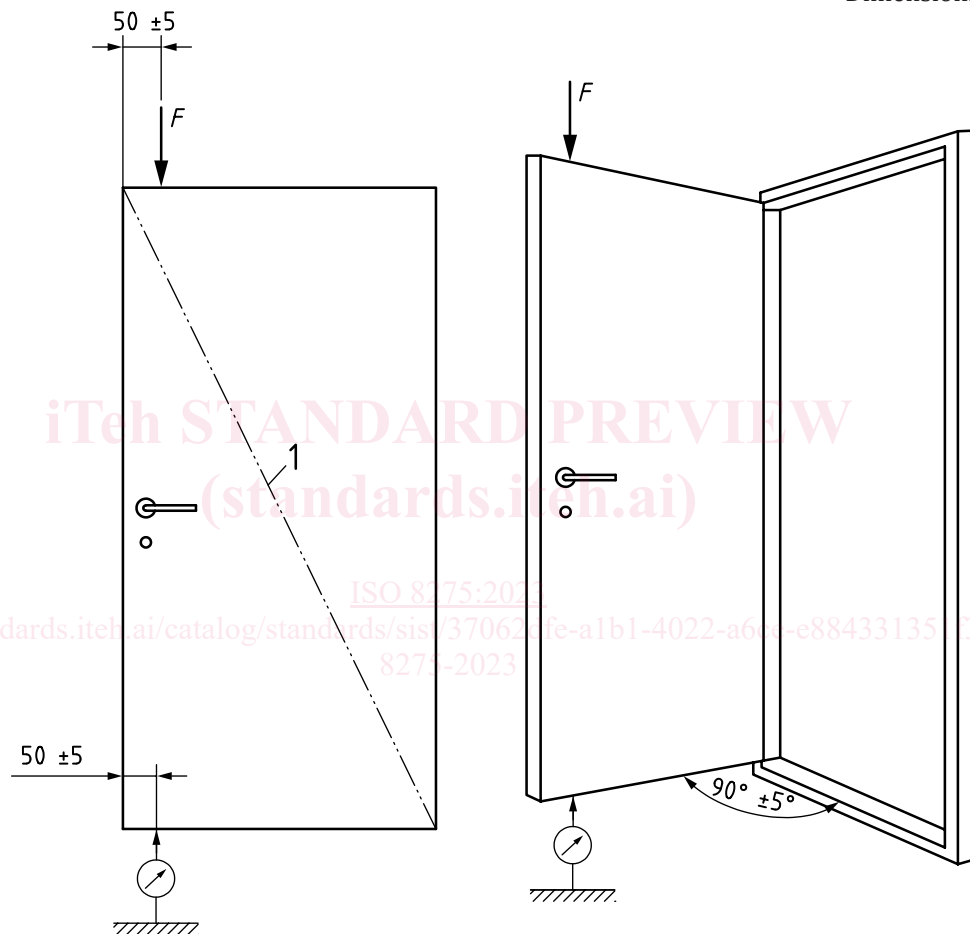
9 Test report

The test report shall contain the following information:

- a) reference to this document, i.e. ISO 8275:2023;
- b) all necessary details to identify the door set or door leaf;
- c) all relevant details concerning the type, specified dimensions, materials, form and construction of the door set or door leaf, including the position of hardware;
- d) full details of the frame and hardware supplied if the assembly is not a door set;
- e) laboratory storage and testing conditions;
- f) the load *F*, in newtons, applied in the test;
- g) the results expressed as in [Clause 8](#);

- h) details of any damage that appeared during the test;
- i) the method used (if the standard includes several);
- j) any deviations from the procedure;
- k) any unusual features observed;
- l) name of testing laboratory;
- m) date of test.

Dimensions in millimetres



Key

- 1 diagonal 'D' of the door leaf
- F load

Figure 1 — Test specimen setup

Bibliography

- [1] EN 947, *Hinged or pivoted doors - Determination of the resistance to vertical load*

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