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Doors and doorsets — Test of behaviour between two different climates

*Portes et blocs-portes — Essai de comportement entre deux climats
différents*



Reference number
ISO 6445:1989(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6445 was prepared by Technical Committee ISO/TC 162, *Doors and windows*.

Annex A of this International Standard is for information only.

Doors and doorsets — Test of behaviour between two different climates

1 Scope

This International Standard specifies the method to be used for the behaviour testing of doors and doorsets placed between two different climates, both climates being kept constant.

It applies to

- tests of internal or external doors or doorsets to be exposed to different climates on either side of the doorleaf and when the effects of these climates on doors and doorsets performance can be measured;
- all doors and doorsets, made of any material, with vertically hinged doorleaves in the normal operating condition for which they are designed and installed according to the manufacturer's recommendations as in a finished building, bearing in mind the test conditions defined below.

It does not apply to doors and doorsets located in rooms with special atmospheres (such as freezing-room doors, etc.).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6442:1981, *Door leaves — Measurement of defects of general flatness*.

ISO 6444:1980, *Door leaves — Test of behaviour un-*

der humidity variations (successive uniform climates).

ISO 8273:1985, *Doors and doorsets — Standard atmospheres for testing the performance of doors and doorsets placed between different climates*.

3 Principle

The test consists in placing the door or doorset between two different climates (climate categories I to IV defined in ISO 8273) for a specified time period in order to measure the overall flatness and to observe the resulting damage. The door is closed but not locked.

4 Sample

The door or doorset used as a sample shall be tested in its final use condition; if not, this shall be notified in the report.

5 Procedure

5.1 Before the door or doorset is exposed to one of the standard atmospheres, it shall normally be preconditioned in an atmosphere with a temperature of $23\text{ °C} \pm 2\text{ °C}$ and a relative humidity of $(50 \pm 5)\%$ for the required time in order to reach approximate temperature and humidity equilibrium.

5.2 This preconditioning shall not be performed when the door or doorset has been submitted to test according to ISO 6444.

5.3 Measure the overall doorleaf flatness to ISO 6442.

5.4 Then place the door or doorset between two climates of one of the categories defined in ISO 8273, in a vertical position free from any stress, according to the values indicated in ISO 8273 for either side.

NOTE 1 Additional categories with temperature and/or relative humidity differences lower than those of category I or higher than those of category IV may be specified in national standards when required by local climatic conditions.

5.5 The test duration shall be 28 days maximum, during which the progress of noticeable deformations shall be recorded.

5.6 The test may be stopped after a shorter period if a deformation balance is reached.

NOTE 2 A deformation balance is considered to be reached when the deformation curve approaches an asymptote.

5.7 Measure the overall door flatness in accordance with ISO 6442 again, and note any damage.

5.8 For symmetrical doors, the test shall be performed in one direction only. In the case of asymmetrical doors (as to construction, shape or finish), the test shall be performed in both directions with an intermediary reconditioning. If the laboratory estimates the test should be performed in one direction only, it shall justify its decision. In all cases, the laboratory shall identify the door sides according to the two climates.

6 Test report

The test report shall include the following information:

- a) information necessary for door or doorset identification: type, dimensions, shape, characteristics of construction and finishing components¹⁾, casual machining (mortice), hardware, bolt and location of rotation components;
- b) the mounting method of the doorleaf tested;
- c) climatic data of the preconditioning;
- d) the test category chosen or if applicable, the conditions lower or higher than those indicated in ISO 8273;
- e) the position of the door sides in relation to the two climates;
- f) the exposure time and a deformation diagram in relation to time;
- g) the initial and final measurement of the overall flatness, as well as the difference between them;
- h) any damage which occurred during the test;
- i) the date of the test.

1) If the test is performed on a raw sample.

Annex A
(informative)

Bibliography

- [1] ISO 1804:1972, *Doors — Terminology*.
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