INTERNATIONAL STANDARD

ISO 6444

Second edition
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Door leaves — Determination of the behaviour under humidity variations in successive uniform climates

Vantaux de portes — Détermination du comportement aux variations d'humidité entre des climats successifs uniformes

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 6444 was prepared by Technical Committee CEN/TC 33, *Doors, windows, shutters, building hardware and curtain walling* (as EN 1294:2000) and was adopted, under a special "fast-track procedure", by Technical Committee ISO/TC 162, *Doors and windows* in parallel with its approval by the ISO member bodies.

This second edition cancels and replaces the first edition (ISO 6444:1980) which has been technically revised.

Throughout the text of this document, read "... this European Standard ..." to mean "... this International Standard ...".

FOREWORD

This European Standard has been prepared by Technical Committee CEN/TC 33 "Doors, windows, shutters, building hardware and curtain walling", the secretariat of which is held by AFNOR.

This European Standard replaces EN 43:1985 „Methods of testing doors - Behaviour under humidity variations of door leaves placed in successive uniform climates“.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Standard has been prepared taking into account ISO 6444 and EN 43.

This draft is one of a series of standards for doors.

1 SCOPE

This European Standard describes the method which is to be used to test the behaviour under humidity variations of door leaves placed in successive uniform climates.

This standard can be applied to all door leaves, (e.g. solid doors, hollow core doors, panelled doors and glazed doors), which are nominally flat and rigid, and which contain hygroscopic materials can might influence their behaviour during this test.

2 NORMATIVE REFERENCES

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 951	Door leaves - Method for measurement of height, width, thickness and squareness
EN 952	Door leaves - General and local flatness - Measurement method
prEN 12519:1996	Doors and windows - Terminology

3 DEFINITIONS

For the purposes of this Standard the definitions given in prEN 12519:1996 apply.

4 PRELIMINARY CONDITIONING

Prior to the test, condition the door leaf for at least 7 days in one of these two standard climates:

Temperature (20 ± 2) °C;	Relative Humidity (65 ± 5) %
Temperature (23 ± 2) °C;	Relative Humidity (50 ± 5) %

5 APPARATUS

Climate chambers capable of maintaining controlled temperature and humidity.

Suitable supporting device for holding the door leaf in a vertical position without imposing any restraint that might affect the development of deformation.

Apparatus for measuring general and local flatness in accordance with EN 952.

Apparatus for measuring height and width in accordance with EN 951.

Apparatus for weighing the specimen in accordance with 6.1, 6.2, 6.3, 6.4 and 6.5.

6 TEST PROCEDURE

6.1 Initial measurement

After conditioning the door leaf in accordance with clause 4, measure its height and width in accordance with EN 951, its general flatness in accordance with EN 952, and its mass. Also measure local flatness in accordance with EN 952 if required.

6.2 Exposure to high humidity

Place the door leaf in a climate defined by:

Temperature	(23 ± 2) °C
Relative Humidity	(85 ± 5) %

The mean values of temperature and relative humidity shall be maintained as close as practicable to the nominal values: the tolerances are permitted only for purposes of regulation.

The duration of exposure to this climate shall be 7 days for doors without applied finish, and 21 days for all other doors.

The test may be stopped before the end of the period specified above, if two successive measurements of general flatness taken at 2 day intervals do not differ by more than 1% or if the specimen has reached hygroscopic equilibrium (difference in mass between two successive weighings at 2 day intervals less than 0,1 % of the initial mass).

If the test house stops the test before the full duration of exposure, it shall give reasons for its decision.

6.3 Measurement after exposure to high humidity

Remeasure the height and width, the general flatness and the mass of the door leaf. Also remeasure local flatness if required.

6.4 Exposure to low humidity

Place the door leaf in a climate defined by:

Temperature	(23 ± 2) °C
Relative Humidity	(30 ± 5) %

The mean values of temperature and relative humidity shall be maintained as close as practicable to the nominal values; the tolerances are permitted only for purposes of regulation.

The duration of exposure to this climate shall be 7 days for doors without applied finish, and 21 days for all other doors.

The test may be stopped before the end of the period specified above, if two successive measurements of general flatness taken at 2 day intervals do not differ by more than 1 % or if the specimen has reached hygroscopic equilibrium (difference in mass between two successive weighings at 2 day intervals less than 0,1 %).

If the test house stops the test before the full duration of exposure, it shall give reasons for its decision.

6.5 Measurement after exposure to low humidity

Remeasure the height and width, the general flatness and the mass of the door leaf. Also remeasure local flatness if required.

7 EXPRESSION OF RESULTS

The results shall be expressed in terms of absolute value and variations in the measurements of the height, width, general flatness, local flatness and mass. The accuracy of the measurements shall be as prescribed in EN 951 and EN 952.

8 TEST REPORT

The test report shall include the following information:

a) all necessary details to identify the door leaf
b) all relevant details concerning the type, dimensions, shape and constructional details of the door leaf, the initial mass, any machining to receive the hardware, and any applied finish
c) description of the device supporting the door leaf during the test
d) duration and characteristics of the conditioning climate if it did not conform to 4
e) reasons for the duration of exposure to the two climates, if shorter than prescribed
f) the successive measurements of height and width
g) the successive measurements of general flatness, and of local flatness if measured
h) the successive measurements of mass
i) any damage occuring during the test
j) name of the testing laboratory
k) the dates between which the test was performed
l) reference to this European Standard