

Doors — Behaviour between two different climates — Test method

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The UK participation in its preparation was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, to Subcommittee B/538/2, Doors, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 17 and a back cover.

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English version

Doors - Behaviour between two different climates - Test method

Portes - Comportement entre deux climats différents -
Méthode d'essai

Türen - Verhalten zwischen zwei unterschiedlichen
Klimaten - Prüfverfahren

This European Standard was approved by CEN on 14 February 2000.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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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 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2000, and conflicting national standards shall be withdrawn at the latest by December 2000.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 supersedes EN 79:1985.

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

This standard includes six informative annexes describing the test procedures.

1 Scope

This European Standard defines the test method to be used for determining the behaviour of door leaves and doorsets between two different climates.

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 952	Door leaves - General and local flatness - Measurement method
EN 12046-2	Operating forces - Test method - Part 2: Doors
EN 1026	Windows and doors - Air permeability - Test method
prEN 12519:1996	Doors and windows - Terminology

3 Definitions

For the purposes of this standard the definitions given in prEN 12519:1996 apply, together with the following:

3.1

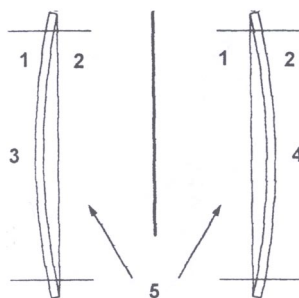
Face 1, face 2

the orientation of face 1 and face 2 of the door with regard to the climates is defined in 6.1

3.2

Bow

Maximum deviation of the long edge of a door leaf measured in accordance with EN 952. According to its orientation, it can be positive or negative, see figure 1



- 1 Face 1
- 2 Face 2
- 3 Negative bow

- 4 Positive bow
- 5 Datum line as defined in EN 952

Figure 1 - Definition of positive and negative bow

4 Principle

The test is carried out by subjecting the doors to two different climates on either side for a period of time, and measuring the resulting bow of the longitudinal lock side edge at stages of the test. If required, the operating forces and the air permeability of the doors in their deformed state are also determined.

5 Apparatus

5.1 Basic equipment

The test facility shall consist of at least:

- a climate chamber or enclosure in which the required climatic conditions on the cold side can be maintained and adjusted within the stipulated tolerances;
- an opposite climate chamber or enclosure in which the required climatic conditions on the warm side can be maintained and adjusted within the stipulated tolerances;
- a frame for supporting the doors, which is sufficiently rigid that it will not be significantly deformed by any force that may be transmitted from the door leaf to the door frame;
- a device for measuring bow;
- a device for determining the operating forces in accordance with EN 12046-2 during exposure to the climatic stress.

5.2 Supplementary equipment

- a bank of filament infrared lamps (see informative Annex A) for heating face 2 of the door. The power of the apparatus shall be such that the surface temperature θ_3 shall be reached within 2 hours and maintained afterwards within a range of ± 5 °C.

The filament infrared lamps shall be positioned in such a way that the emitted radiation energy is distributed as evenly as possible over the door leaf. (See Annex A).

- Reference surfaces, having an absorption coefficient a_s in the visible field (0,4 μm to 0,7 μm) of at least 0,90 and a thermal resistance of between 0,1 Km^2/W and 0,2 Km^2/W , each consisting of an aluminium sheet with matt black finish, mounted on polystyrene thermally insulating material (extruded; λ 0,03 W/mK) having a thermal resistance between 0,6 Km^2/W and 0,7 Km^2/W , and incorporating a temperature sensor;

NOTE 5 mm thickness of polystyrene is usually adequate.

- a device for measuring the surface temperatures of the door leaf;

- a device, installed in the climatic chamber, for determining the air permeability of the door between the test chambers in accordance with EN 1026;

or

- a device for deforming the door leaf mechanically, when determination of the air permeability of the doorset is carried out outside the climatic test chambers.

NOTE Annex B gives an example of such a device.

6 Preparation

6.1 Orientation of the doors

The orientation of the faces of the door shall be defined by the manufacturer prior to its installation in the test chamber. (See also tables 1 and 2).

Closing side = face 1, if the door normally opens outwards, or

Closing side = face 2, if the door normally opens inwards.

If this information is missing, the door shall be tested in the orientation least favourable for the classification.

NOTE Which orientation is least favourable for the classification depends on the test required. One orientation may be worse for operating forces and the other for air permeability. It may therefore be necessary to test the door in both orientations.