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**Door leaves — General and local  
flatness — Measurement method**

*Vantaux de portes — Planéités générale et locale — Méthode de  
mesure*

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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 6442 was prepared by Technical Committee CEN/TC 33, *Doors, windows, shutters, building hardware and curtain walling* (as EN 952:1999) 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 6442:1981) which has been technically revised.

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

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## Foreword

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

This European Standard supersedes EN 24:1974.

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 February 2000, and conflicting national standards shall be withdrawn at the latest by February 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 draft standard is one of a series of standards for doors.

This standard has been prepared taking into account EN 24:1974 and prEN 224, and supersedes both.

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## 1 Scope

This standard can be applied to all rectangular door leaves.

The standard specifies the method to be used to measure the deviations in general and local flatness of door leaves.

In this standard the concept of local flatness deviation is limited to defects considered to be prejudicial to the appearance of the door leaf.

## 2 Apparatus

### 2.1 Measurement equipment for general flatness

A vertically mounted rigid frame on which is attached four reference points forming a rectangular reference plane, appropriate to the size of door leaf to be tested.

A straight reference bar capable of spanning the height of the door leaf.

A dial or digital gauge accurate to 0,01 mm, or feeler gauges.

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### 2.2 Measurement equipment for local flatness

A dial or digital gauge accurate to 0,01 mm mounted at the centre of a 200 mm long straight reference bar.

NOTE : For non-laboratory testing (e.g. on site) it is acceptable to use a 200 mm long straight reference bar and feeler gauges.

## 3 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.

## 4 Procedure

### 4.1 General flatness measurement of twist

Position the reference points to occur  $(20 \pm 5)$  mm in from the edges of each corner of the door leaf, when mounted with its long edges horizontal.

Place the door leaf vertically on a long edge against the reference plane so that without restraint it makes contact with three corners of the reference plane. Measure the deviation of the fourth corner of the door leaf from the fourth corner of the reference plane, to the nearest 0,1 mm.

#### 4.2 General flatness measurement of bending

With the door leaf mounted vertically, position the straight reference bar along the face of the door leaf, parallel to and not more than 20 mm in from one edge. Measure the maximum deviation of the face of the door leaf from the reference bar, to the nearest 0,1 mm.

Repeat the procedure for the other edges of the door leaf.

#### 4.3 Local flatness measurement

The door leaf is to be supported without restraint.

With the 200 mm long reference bar and dial or digital gauge, measure any visually apparent deviations from local flatness on the face of the door leaf, to the nearest 0,05 mm.

Repeat the procedure for the other face of the door leaf.

NOTE : The test may be carried out with the door leaf in the horizontal or vertical plane.

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### 5 Expression of results

#### Record :

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- the measured value of twist and maximum deviations in bending for each edge of the door leaf ;
  - the position and measured value of any apparent deviations in local flatness for each face of the door leaf.

### 6 Test report

The test report shall contain the following information :

- a) reference to this standard ;
- b) all necessary details to identify the door leaf ;
- c) all relevant details concerning the type, specified dimensions, materials, form and construction of the door leaf ;
- d) laboratory storage and testing conditions ;
- e) the results expressed as in clause 5 ;
- f) name of testing laboratory ;
- g) date of test.

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