

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

The European Standard EN 947:1998 has the status of a
British Standard

ICS 91.060.50

National foreword

This British Standard is the English language version of EN 947:1998.

The UK participation in its preparation was entrusted to Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, 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 committee can be obtained on request to its secretary.

This British Standard forms part of a package of standards on doors which will not become fully effective until all standards in the package have been published and any superseded standards have been withdrawn. The date of withdrawal for national standards will be agreed within CEN and will be notified.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 4, an inside back cover and a back cover.

Amendments issued since publication

Amd. No.	Date	Text affected

This British Standard, having been prepared under the direction of the Sector Committee for Building and Civil Engineering, was published under the authority of the Standards Committee and comes into effect on 15 May 1999

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English version

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

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

Drehflügeltüren — Ermittlung der Widerstandsfähigkeit gegen vertikale Belastung

This European Standard was approved by CEN on 26 November 1998.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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 replaces EN 108:1980.

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 June 1999, and conflicting national standards shall be withdrawn at the latest by December 1999.

This standard is one of a series of standards for doors. The test method relates to performance requirements to be published in EN 1192 *Doors — Mechanical strength — Requirements and classification*.

This standard has been prepared taking into account ISO 8275 and EN 108.

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.

Introduction

For manufacturers of door leaves whose products are not sold as part of a known doorset, provision is made for claiming compliance 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.

1 Scope

This European standard applies to all vertically hinged or pivoted doors.

The standard 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 doorset.

NOTE Such downward forces that might reasonably be expected, such as a child swinging on the handle, should neither damage, nor impair the performance of, a door.

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

2 Apparatus

2.1 test 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

2.2 loading equipment, a suitable device with weights or a controlled and calibrated ram, accurate to 2 %

2.3 measuring equipment, a dial or digital gauge accurate to 0,01 mm, and a steel measuring tape or similar measuring instrument accurate to 0,5 mm

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.

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.

4 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.

5 Expression of results

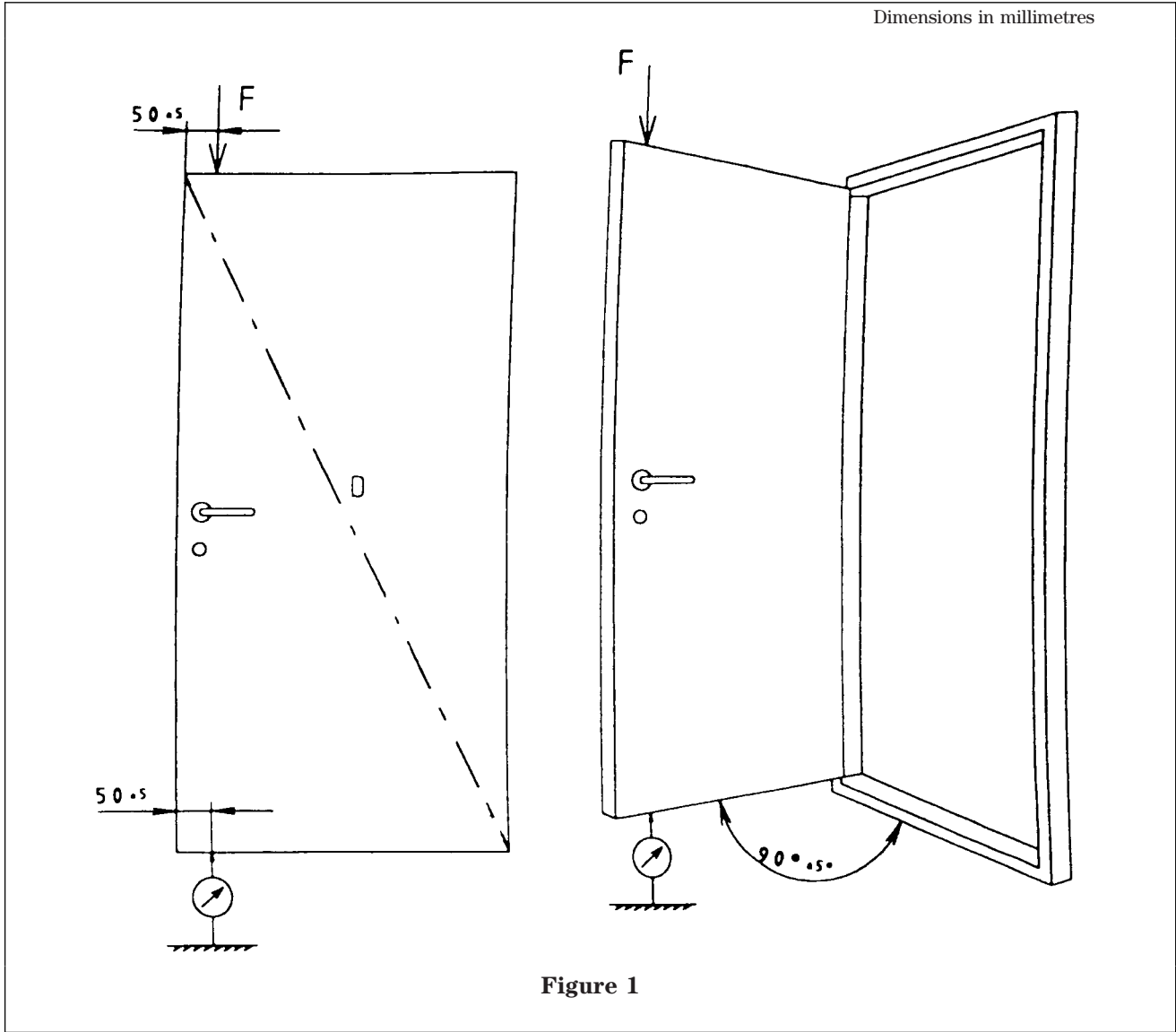
Record:

- the deformation under load *F* and the residual deformation of the doorset 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.

6 Test report

The test report shall contain the following information:

- a) reference to this European Standard;
- b) all necessary details to identify the doorset or door leaf;
- c) all relevant details concerning the type, specified dimensions, materials, form and construction of the doorset or door leaf, including the position of hardware;
- d) full details of the frame and hardware supplied if the assembly is not a doorset;
- e) laboratory storage and testing conditions;
- f) the load *F*, in newtons, applied in the test;
- g) the results expressed as in clause 5;
- h) details of any damage that appeared during the test;
- i) name of testing laboratory;
- j) date of test.



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