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# International Standard



# 8271

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Door leaves — Hard body impact test

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[ISO 8271:1985](#)

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Descriptors : doors, tests, impact tests.

## 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.

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 8271 was prepared by Technical Committee ISO/TC 162  
*Doors and windows.*

ISO 8271:1985  
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# Door leaves — Hard body impact test

## 1 Scope and field of application

This International Standard specifies a hard body (steel ball) impact test for door leaves.

It applies to all door leaves which are nominally flat and rigid.

## 2 Reference

ISO 1804, *Doors — Terminology*.

## 3 Definitions

For the purposes of this International Standard, the definitions given in ISO 1804 apply.

## 4 Principle

Striking the faces of the door leaf (excluding glazed parts) in predetermined positions with a steel ball having a given energy at impact.

## 5 Apparatus

### 5.1 Supports

The door leaf shall be mounted horizontally in a stable manner on suitable rigid supports at the longer edges.

### 5.2 Steel ball

This shall be a solid steel ball and shall have a mass of  $500 \pm 5$  g and a diameter of about 50 mm.

## 6 Procedure

**6.1** Prior to being tested door leaves shall be stored in conditions (relative humidity between 40 and 75 %) that do not have any detrimental effects.

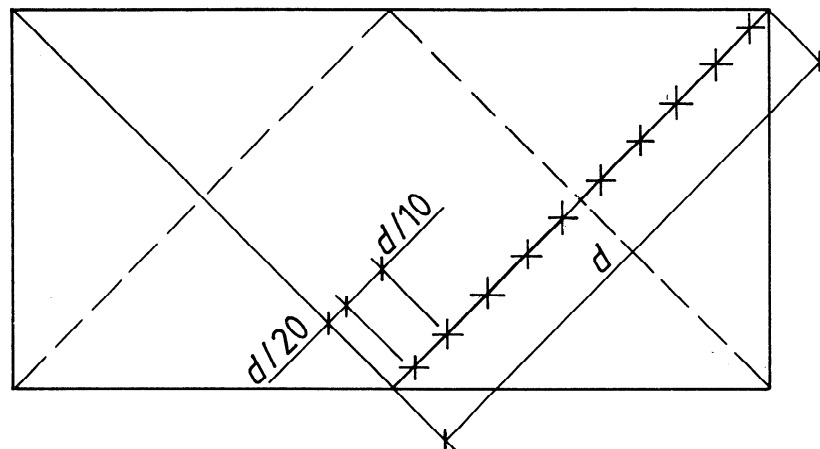
**6.2** Draw on the two faces of the door leaf, but in opposite directions, four diagonals of the half faces (see the figure). Determine 40 impact points by dividing the length  $d$  of each diagonal into 11 parts, each pitched at  $d/10$  except at the ends where they shall be pitched at  $d/20$ .

**6.3** Drop the steel ball from the required height<sup>1)</sup>.

When the impact leaves a permanent imprint, measure, 15 min after the impact, the maximum diameter, to the nearest 0,5 mm, and the maximum depth, to the nearest 0,1 mm, of the imprint.

The imprint may be recorded permanently, for example by placing a piece of carbon paper over the impact point.

In all cases, note any damage.



Figure

1) The choice of drop height(s) depends on the criteria adopted for judging damage and the requirements for a given category of door.

## 7 Expression of results

Calculate

- the mean values and the standard deviation of the diameters of the imprints, and
- the mean values and the standard deviation of the depths of the imprints.

## 8 Test report

The test report shall include the following information:

- a) relevant details concerning the type, dimensions, form, construction and finish of the door leaf, and of machining and hardware if any;

b) the duration of storage and the storage conditions (see 6.1);

c) the drop height(s);

d) the mean value of diameters and the mean value of depths of the imprints when they are greater than the maximum values fixed for the criteria for judgement;

e) the standard deviation of diameters of imprints and the standard deviation of depths of imprints;

f) all damage appearing during the test;

g) the temperature and relative humidity in the laboratory at the time of the test;

h) the date of test.

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