

# INTERNATIONAL STANDARD

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## **Doorsets — Static torsion test**

*Blocs-portes — Essai de torsion statique*

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Reference number  
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## Foreword

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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 9381 was prepared by Technical Committee ISO/TC 162, *Doors and windows*.

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## Doorsets — Static torsion test

### 1 Scope

This International Standard specifies the method to be used to determine the residual deformation of a doorset and its hardware.

It applies to all doorsets made in any material with vertically hinged doorleaves in their normal operating conditions for which they are designed and installed according to the manufacturer's recommendations as in a finished building, bearing in mind the test conditions defined below.

### 2 Principle

The doorleaf is opened to an angle of 90°. The free upper corner of the doorleaf on the lock side is fixed while a horizontal load is placed for a certain time on the lower corner of the doorleaf. The deformation torsion is measured at the lower free corner of the doorleaf under load and after being unloaded.

### 3 Apparatus

A surround for the specimen to be tested shall be prepared. It shall be stiff enough to withstand the test pressures without deflecting to an extent likely to impair jointing or to impose bending stresses on the test specimen. When the installation conditions are known, the specimen shall be installed to simulate these, wherever practical, and otherwise installed in a way that ensures normal operating conditions.

### 4 Procedure

**4.1** Open the doorleaf to an angle of 90° and fix the free upper corner of the lock side of the doorleaf at a point 50 mm from each edge of the doorleaf.

**4.2** Apply to the lower free corner of the doorleaf for a period of 5 min at right-angles to its plane a static load with one of the preferred values: 100 N or 150 N or 200 N, according to the performance requirements of the door.<sup>1)</sup>

**4.3** Measure the deformation in torsion 5 min after load application and 3 min after unloading, with an accuracy of  $\pm 0,1$  mm.

### 5 Test report

The test report shall include the following information:

- a) the relevant details of type, dimensions, mass, form, construction of doorset;
- b) the type of hardware and method of mounting in the doorset;
- c) the deflection of the door in the horizontal direction 5 min after load application;
- d) the residual deflection of the door in the horizontal direction 3 min after unloading;
- e) the load at which the test has been carried out, expressed in newtons;
- f) all relevant damage appearing during the test.

1) In the absence of other specifications, 100 N or 150 N or 200 N are given as guidance.