
**Test method of doorset opening
performance in diagonal deformation —
Seismic aspects**

*Méthode d'essai de la performance d'ouverture des blocs-portes en
déformation diagonale — Considérations sismiques*

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Foreword

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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 15822 was prepared by Technical Committee ISO/TC 162, *Doors and windows*.

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Introduction

This International Standard determines the extent to which the opening facility is ensured and retained for doorsets used for emergency passage in order that they be safe in case of an earthquake.

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Test method of doorset opening performance in diagonal deformation — Seismic aspects

1 Scope

This International Standard specifies the test method for evaluating the opening function of single-leaf doorset under in-plane diagonal deformation by in-plane static load.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1804, *Doors — Terminology*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1804 and the following apply.

3.1

in-plane displacement

ratio of difference in amounts of horizontal movements of upper and lower ends to the distance between the vertical measuring points

NOTE In-plane displacement is designated in units of radians.

3.2

opening force

force applied to open the door leaf

3.3

unlocking torque value

force, in torque value, applied to unlock the doorset

4 Principle

The doorset is forced to deform by a static load being gradually applied, and the force necessary to open and unlock the door under such diagonal deformation is measured.

5 Test specimen

The test specimen shall be constructed and installed in operating conditions equivalent to normal and practical use.

If the test specimen contains a glazed area, it shall comply with the requirements of the manufacturer. In case no glass thickness has been specified, the test shall be carried out with the minimum glass thickness specified in the specification.

6 Test apparatus

6.1 Test rig

The test rig shall be a structure where the test specimen can be installed, as shown in Figure 1, in accordance with the manufacturer's specification and the codes of practice. The rig frame shall be sufficiently stiff and rigid to withstand the force applied during the test, and shall be assembled in pin-joint. The details of joints are shown in Figures 2 a) and 2 b).

6.2 Device to apply the force

The device to apply the force shall be able to apply a static force to the test rig to produce diagonal deformation. The force is applied to either the upper or the lower horizontal rig frame. When regarded as a positive force, the force is applied in the direction from the lock side to the hinge side; when regarded as negative force, it is applied in the opposite direction.

6.3 Device to measure the displacement

The device to measure the displacement shall be able to measure the horizontal displacement at measuring points 1 and 2 and vertical displacement at points 3 and 4, as shown in Figure 3. The measuring points shall be 100 mm outside the test rig.

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6.4 Device to measure the opening force

The device to measure the opening force shall be able to measure the necessary force, which is applied to the door handle by a pushing or pulling operation, to open the doorset.

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6.5 Device to measure the unlocking torque

The device to measure the unlocking torque shall be able to measure the torque value necessary to unlock the doorset by turning the handle or knob.

7 Test procedure

7.1 Installation of the test specimen

The test specimen shall be installed and secured horizontally and vertically, without twists and bends.

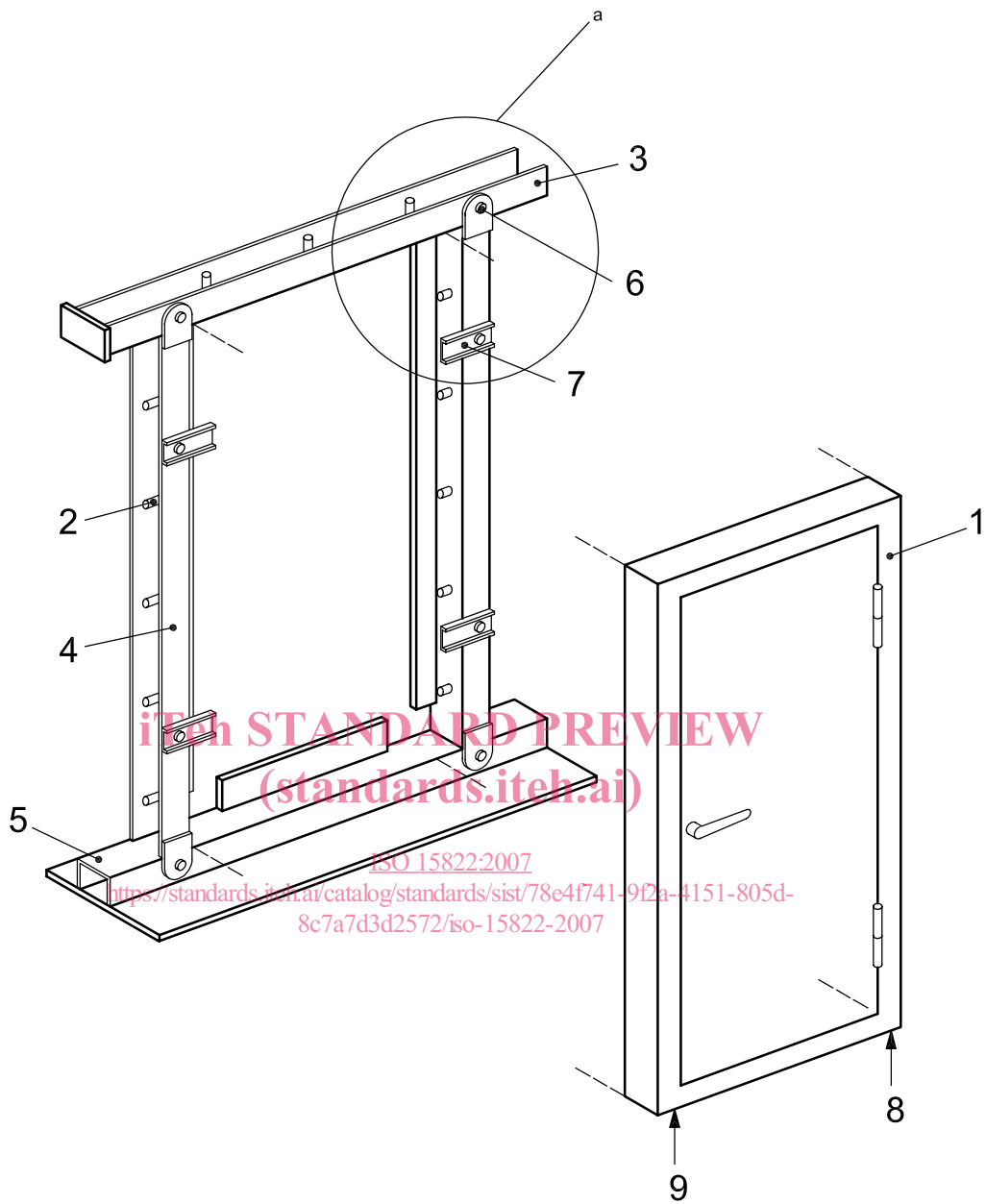
7.2 Procedure

7.2.1 The test shall be conducted according to the following procedure from 7.2.2 through 7.2.8.

7.2.2 Check that the door leaf can operate normally and make sure that the doorset can be locked.

7.2.3 Install the displacement measuring device as shown in Figure 2.

7.2.4 Confirm the initial "zero" position of displacement measuring devices.



Key

- 1 test specimen
- 2 device to secure test specimen in the frame
- 3 upper horizontal rig frame
- 4 vertical rig frame
- 5 lower horizontal rig frame
- 6 pin joint (pin support)
- 7 guide
- 8 hinge side
- 9 lock side

^a See Figures 2 a) and 2 b).

Figure 1 — Example of test rig