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# International Standard



# 8113

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

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## Glass containers — Resistance to vertical load — Test method

*Réipients en verre — Résistance à la charge verticale — Méthode d'essai*

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[ISO 8113:1985](#)

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**Descriptors** : containers, glass packaging, tests, compression tests, nondestructive tests, destructive tests, determination, loads (forces).

## 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 8113 was prepared by Technical Committee ISO/TC 63, *Glass containers*.

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# Glass containers — Resistance to vertical load — Test method

## 1 Scope and field of application

This International Standard specifies a method of inspection and determination of the resistance of glass containers to external force in the direction of the axis. The pass tests are intended especially for containers the resistance of which is specified.

## 2 Sampling

The test shall be performed on a predetermined number of containers.

The containers used for the test shall not have been subjected to any other mechanical or thermal test which could affect their resistance to vertical load.

## 3 Apparatus

**3.1 Press**, or other suitable apparatus, with the following characteristics:

- the apparatus shall be capable of developing the necessary force and indicating this force by means of a pointer or recording device to an accuracy of at least 2,5 %;
- the apparatus shall consist of two horizontal flat steel pressure plates. The upper plate shall be self-aligning and the lower one shall be provided with centring marks on its surface;
- the apparatus shall be equipped with a protective cover, or each type of test container shall be provided with a sufficiently firm cylindrical cover suitable for its height which shall be slightly lower than the height of the test sample.

**3.2 Pads**, for example cardboard or several sheets of paper, to prevent glass-to-metal contact under load.

## 4 Procedure

**4.1** The temperature of the sample shall not differ by more than 5 °C from the ambient.

**4.2** Place closure on the test container, if this is specified for the test.

**4.3** The lower plate of the press (3.1) shall be clean, especially of glass particles. Position a base pad (3.2), with the test container placed on it, in the centre of the lower plate. The centreline of the container shall be in line with that of the apparatus.

**4.4** Secure the container using the protective cover and, at the same time, place the corresponding closure on the sealing surface of the container finish. The test container shall be covered with a pad similar to the base pad situated under the test container unless a closure is used.

### NOTES

1 The use of the corresponding closures is suitable, especially when metal closures with a sealing layer are used. In these cases, screw and bayonet closures shall be locked manually.

2 Where either paper or a closure is used, new upper and lower pads shall always be used for testing each container.

**4.5** The approach speed or the average rate of increase in the force should be constant and shall be reported.

**4.6** The following procedures are carried out according to the type and the purpose of the test:

#### a) Pass test

Increase the force applied to the specified value. When the specified value is achieved, the plates shall be withdrawn. After testing a predetermined number of the containers, the test is complete.

#### b) Total progressive test

Increase the force applied progressively until the container breaks. The test shall be applied to all containers in the test series.

## 5 Test report

The test report shall include the following information:

- a) the reference to this International Standard;
- b) a description and the capacity of the apparatus, and the test conditions according to 4.3;
- c) a description and the number of containers in the sample tested and the sampling method;
- d) mention of the upper and lower pads applied or closure, if used;
- e) the approach speed or the average rate of increase in the force;
- f) results, according to the type and the purpose of the test:
  - 1) for the pass test, in accordance with 4.6 a):
    - the force achieved (loading),
    - the number of containers which failed the test;
  - 2) for the total progressive test, in accordance with 4.6 b):
    - the force, expressed in kilonewtons, needed to break each container,
    - the mean value of these values,  $\bar{x}$ ,
    - the standard deviation,  $s$ .

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