INTERNATIONAL STANDARD

ISO 9008

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Glass bottles — Verticality — Test method

Bouteilles en verre — Verticalité — Méthode d'essai

Reference number
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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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.

International Standard ISO 9008 was prepared by Technical Committee ISO/TC 63, *Glass containers*, Sub-Committee SC 2, *Test methods*.

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Glass bottles — Verticality — Test method

1 Scope

This International Standard specifies a test method for determination of the verticality of glass bottles.

NOTE 1 Deviation from the vertical axis may cause difficulties on fast-filling lines.

This test method determines not only the deviation of the whole body from the vertical, but also the combined effect of various deformations which may also be present, e.g. the deviation of the neck from vertical, offset finish and ovality of the finish (ring).

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7348:1991, *Glass containers — Manufacture — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 7348 and the following definitions apply.

3.1 verticality; vertical axis deviation: Horizontal deviation of the centre of the container finish from a theoretical vertical line through the centre of the base. This deviation is equal to half the diameter of the circle described by the centre of the finish when the bottle rotates around the vertical axis through the centre of the base.

3.2 verticality tolerance: The limits outside which the verticality shall not deviate when the bottle is placed on a flat horizontal surface.

4 Apparatus

4.1 The apparatus shall be capable of maintaining the base of the bottle horizontal and of measuring the deviation of the finish from the vertical to an accuracy of 0,1 mm.

Various types of apparatus exist; for example, measurements can be made

a) by comparison with a horizontal scale;

b) by using a dial gauge, and

c) by projecting a magnified shadow on a scale.

In all cases, the measurements are carried out on the outside of the ring (finish).

4.2 For round bottles, the simplest form of apparatus is a verticality gauge which comprises a baseplate fitted with a V-block, or a rotatable plate with a three- or four-jaw self-centring chuck, and a vertical pillar carrying a horizontal scribe or dial gauge which is adjustable with regard to height and length. A non-touching light-scanning apparatus may also be used.

4.3 For non-round bottles, a device should be used which enables the bottle to be held in the centre of a rotatable plate.

4.4 Apparatus other than that specified in this clause may be used provided that the same degree of accuracy is obtained.

5 Sampling

Sampling shall form the subject of agreement between the parties concerned.

6 Procedure

6.1 Round bottles

Place the bottle either

a) on a horizontal baseplate and press it against a V-block using a downward force at 45° to the horizontal, or

b) on a horizontal rotatable plate in a three- or four-jaw self-centring chuck.

6.2 Non-round bottles

Locate the bottle in the device (4.3).

6.3 Measurement

Rotate the bottle or the plate, depending on the case, through 360° and record, to the nearest 0,1 mm, the minimum and maximum distance of the outside of the finish from a fixed point on the same horizontal plane.

7 Expression of results

Take as the vertical deviation, half the difference between the maximum and minimum distance measured.

8 Test report

The test report shall specify the following information:

a) reference to this International Standard;

b) the size of the sample and the type of container tested;

c) manufacturing details;

d) the type of apparatus used;

e) the results obtained;

f) the tester's name and signature, and date of test.

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