
Granulated cork — Determination of apparent bulk density

Granulés de liège — Détermination de la masse volumique apparente

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 87, *Cork*.

This third edition cancels and replaces the second edition (ISO 2031:1991) of which it constitutes a minor revision. Minor editorial changes have been made in this edition.

Granulated cork — Determination of apparent bulk density

1 Scope

This International Standard specifies a method of determining the apparent bulk density of granulated cork, as defined in ISO 633.

2 Normative references

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

ISO 633, *Cork — Vocabulary*

ISO 2067, *Granulated cork — Sampling*

3 Apparatus

3.1 **Balance**, accurate to 0,5 g.

3.2 **Oven**, capable of maintaining a temperature of (20 ± 2) °C and a relative humidity of (65 ± 5) %.

3.3 **Cubic container with a known accurate mass**, capacity 2 dm³ (side 126 mm) to be used with granulates having a grain size larger than 4 mm (see [Figure 1](#)).

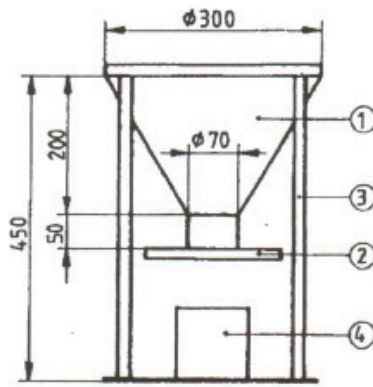
3.4 **Cubic container with a known accurate mass**, capacity 1 dm³ (side 100 mm) to be used with granulates having a grain size equal to or lower than 4 mm (see [Figure 1](#)).

3.5 **Wooden ruler**.

3.6 **Hopper stand, for the hopper** with a height such that the upper rim of the hopper is 450 mm away from the supporting surface (see [Figure 1](#)).

3.7 **Conical hopper**, of stainless steel, with:

- upper and lower diameters of 300 mm and 70 mm respectively, at a distance of 200 mm from each other;
- the top of the hopper is open and the bottom ends in a cylindrical tube 50 mm high with a removable bottom, which allows a quick and complete opening of the cylindrical tube, in such a way that the granulated cork falls down into the container, always at the same speed and flow type (see [Figure 1](#)).



Key

- 1 conical hopper
- 2 removable bottom
- 3 stand for the hopper
- 4 cubic container

Figure 1 — Apparatus

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4 Sampling

Follow the instructions given in ISO 2067.

5 Procedure

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5.1 Preparation of the sample

Condition the sample at a temperature of (20 ± 2) °C and a relative humidity of (65 ± 5) %, keeping it in the oven (3.2) for 24 h.

For process control, record the environmental conditions under which the determinations are carried out. The ambient temperature shall not exceed 30 °C.

5.2 Test portion

Immediately after conditioning the sample, take at random a test portion large enough (see ISO 2067) to fill the cubic container (3.3 or 3.4 depending on the granularity) three times, allowing for overfill.

5.3 Determination

Hang the hopper (3.7) on the stand (3.6). Place the cubic container (3.3 or 3.4) under the base of the hopper and on the supporting surface of the stand.

Close the hopper bottom and pour the test portion to fill the hopper.

Do not move or shake the container up to the determination of its weight. Do not compress the granules. Open fully the bottom of the hopper (3.7) and allow enough granulated cork to fall until you completely fill the container. Use the ruler (3.5) to level the top.

Weigh it on the balance (3.1) taking into account the mass of the cubic container.

Perform three tests, each time with the same portion.

6 Expression of results

The apparent bulk density, expressed in kilogrammes per cubic metre, is equal to

$$\frac{m}{2} \text{ for grain sizes larger than 4 mm (see ISO 2067), or}$$
$$m \text{ for grain sizes equal to or lower than 4 mm}$$

where m is the mass, in grams, rounded to the nearest whole number, of the granulated cork taken from the container (3.3 or 3.4), in each determination.

Take as the result the arithmetic mean value of the three determinations.

Round the result to the nearest integer.

7 Test report

The test report shall include the following information:

- a) the complete identification of the sample;
- b) the test results;
- c) details of procedures not specified in this International Standard or considered as optional;
- d) any incidents that may have affected the results.

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