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BSI Standards Publication

Coffee and coffee products — Determination of particle size of ground roasted coffee — Horizontal sieving motion method using circular brushes

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National foreword

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Café et dérivés du café — Détermination de la taille des grains de café torréfié moulu — Méthode de tamisage horizontal à l'aide de brosses circulaires

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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).

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 15, *Coffee*.

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Coffee and coffee products — Determination of particle size of ground roasted coffee — Horizontal sieving motion method using circular brushes

1 Scope

This document specifies a method for carrying out particle-size distribution analysis of roasted ground coffee by horizontal sieving motion method using circular brushes to minimize the effects of obstruction, agglomeration and adhesion. It specifies general principles to follow concerning apparatus, procedure and presentation of results.

This document is applicable to particle sizes ranging from approximately 150 µm to 2 mm.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 2395, *Test sieves and test sieving — Vocabulary*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 9276-1, *Representation of results of particle size analysis — Part 1: Graphical representation*

ISO 9276-2, *Representation of results of particle size analysis — Part 2: Calculation of average particle sizes/diameters and moments from particle size distributions*

ISO 9276-3, *Representation of results of particle size analysis — Part 3: Adjustment of an experimental curve to a reference model*

ISO 9276-4, *Representation of results of particle size analysis — Part 4: Characterization of a classification process*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2395 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

Separate a sample of roasted ground coffee by horizontal sieving machines using circular brushes on each test sieve to obtain reliable analysis.

Annex B compares the results of the horizontal sieving method (with or without brushes) to the results of the laser diffraction method.

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5 Apparatus

The usual laboratory apparatus and, in particular, the following shall be used.

5.1 Horizontal sieve shaker or tap sieve shaker.

The equipment shall be provided with a timer that counts to at least 10 min, as well as all the necessary accessories for its proper and safe functioning.

5.2 Test sieves.

The sieves given in Table 1 shall be used in accordance with ISO 565 and ISO 3310-1. It is not necessary to use sieves smaller than 150 µm (experimental evidence for this is given in Annex C).

Test sieving shall be carried out with a single test sieve or with a series of test sieves with different nominal aperture sizes. A lid and receiver pan should be included in both cases, where appropriate. The number of sieves used in the test should be sufficient to give the requisite information about the material and to avoid excessive wear or blinding.

Table 1 — Sieves' opening in accordance with ISO 565 and ISO 3310-1

Series R 20/3 µm	Series R 40/3 µm
1 400	1 180
1 000	850
710	600
500	425
355	300
250	212
180	150

5.3 Balance, capable of weighing to an accuracy of 0,1 g.

5.4 Special circular brush, with a convex or flat cap and a mass not greater than 25 g in order to avoid possible fractionation of the material by the brush. For detailed information on the brushes and their manufacturing, see Annex E.

A special circular brush with a cap is illustrated in Figure 1.

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