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Bamboo charcoal —

Part 1: Generalities

Charbon de bambou —

Partie 1: Généralités

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Contents

Page

Foreword

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This document is prepared by Technical Committee ISO/TC 296, *Bamboo and Rattan*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The use of bamboo for charcoal provides an effective means of improving the utilization of bamboo. Bamboo charcoal can be produced by a wide variety of traditional methods and modern technology. With the increase in the use of charcoal for household and industrial purposes, the need has arisen for specifications that establish a standard for classification and testing.

Bamboo charcoal —

Part 1:
Generalities

1 Scope

This document specifies the requirements and test methods for bamboo charcoal. It is applicable to the bamboo charcoal briquette.

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 1953, *Hard coal — Size analysis by sieving*

ISO 18122, *Solid biofuels — Determination of ash content*

ISO 18123, *Solid biofuels — Determination of the content of volatile matter*

ISO 18134-3, *Solid biofuels — Determination of moisture content — Oven dry method — Part 3: Moisture in general analysis sample*

ISO 18135, *Solid biofuels — Sampling*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1
bamboo charcoal
BC
black solid porous product made of carbonized bamboo

3.2
bamboo charcoal briquette
BCB
shaped, solid product of carbonized bamboo particles or charcoal made by compression or extrusion with or without a binder

3.3
tubular bamboo charcoal
TBC
bamboo charcoal (3.1) made of carbonized bamboo culm

3.4
bamboo charcoal flakes
BCF
flat, thin pieces of *bamboo charcoal* (3.1)

3.5
bamboo charcoal granules
BCG
minute quantity or fragment of *bamboo charcoal* (3.1)

3.6
bamboo charcoal powder
BCP
milled or pulverized charcoal with a typical particle size less than 1 mm

3.7
moisture content
MC
water in the fuel removable under specific conditions

3.8
ash content
AC
mass of inorganic residue remaining after combustion of *bamboo charcoal* (3.1) under specified conditions, typically expressed as a percentage of the mass of dry matter in fuel

3.9
fixed carbon
FC
remaining carbon after removal of water, ash and volatile matter

4 Classification

Bamboo charcoal could be classified into traditional bamboo charcoal and bamboo charcoal briquette, and the latter can be further subdivided into carbonized bamboo powder briquette (CBPB) and compressed bamboo charcoal powder briquette (BCPB), respectively, according to the production process.

NOTE 1 Bamboo charcoal briquettes can be produced through processes:

a) Carbonization of bamboo powder briquette, and

b) Compression of bamboo charcoal powder.

NOTE 2 The raw material for process a) can be compressed bamboo powder with or without other biomass powder blends and mixtures.

NOTE 3 The raw material for process b) can be bamboo charcoal powder with or without other fuel blends and mixtures.

Table 1 — Bamboo charcoal classification according to shape and size

C(s1)	TBC	BCF[a]	BCG[b]			BCP[b]
			I	II	III	
C(s2) mm	*L* > *D*	(30 to 50) (50 to 100)	1 to 3	3 to 10	10 to 20	≤1

Key

C(s1) = Classification according to shape

C(s2) = Classification according to size

TBC = Tubular bamboo charcoal

L = Length

D = Diameter

BCF = Bamboo charcoal flakes

BCG = Bamboo charcoal granules

BCP = Bamboo charcoal powder

NOTE This table illustrates the classification of bamboo charcoal.

[a] Size (width × length) of (30 to 50) × (50 to 100) is mostly applied in current international trade. Size of bamboo charcoal flakes can also be provided in other specification upon request by supplier and purchaser.

[b] BCP grade is decided by the size of the majority (80% and above) of the granules,

i.e. minimum 80 % of bamboo charcoal granules with the size of 2 mm to 4 mm can be regarded as Grade II, otherwise, re-grading or reprocessing is required to reach the corresponding grade. See ISO 1953.

5 Requirements

5.1 Sensory inspection

The product shall appear black with no peculiar smell, contaminant and foreign matter.

5.2 Methods of measuring bamboo charcoal particle size

The bamboo charcoal particle size shall be measured in accordance with ISO 1953.

5.3 Requirements of physical and chemical properties for bamboo charcoal

Table 2 — Requirements for physical and chemical properties of bamboo charcoal

Item	Requirements					
	Bamboo charcoal			Bamboo charcoal briquette		
Grading	I	II	III	I	II	III
MC %	≤9,00	≤12,00	≤12,00	≤9,00	≤12,00	≤12,00

Key

BC = Bamboo charcoal

BCB = Bamboo charcoal briquette

MC = Moisture content

AC = Ash content

FC = Fixed carbon

NOTE The physical and chemical properties of bamboo charcoal can be tested to comply with all the requirements specified in this table.