
Solid biofuels — Sample preparation

Biocombustibles solides — Préparation des échantillons



This document is a preview generated by EBS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols	2
5 Principles of correct sample reduction	2
6 Apparatus	2
6.1 Apparatus for sample division	2
6.1.1 General	2
6.1.2 Riffle boxes	2
6.1.3 Rotary sample dividers	3
6.1.4 Shovels and scoops	4
6.2 Apparatus for particle size-reduction	5
6.2.1 Coarse cutting mill or wood crusher	5
6.2.2 Cutting mill	5
6.2.3 Axe	6
6.2.4 Hand saw	6
6.2.5 Sieves	6
6.2.6 Balance	6
7 Sample reduction — General principles	6
8 Methods for sample division	8
8.1 General	8
8.2 Riffing	9
8.3 Strip mixing	9
8.4 Long pile-alternate shovel method	9
8.5 Rotary divider	10
8.6 Coning and quartering	10
8.7 Mass reducing straw-like material (handful sampling)	10
9 Method for reducing laboratory samples to sub-samples and general analysis samples	11
9.1 Mixing	11
9.2 Initial sample division	11
9.3 Pre-drying	11
9.4 Coarse cutting (particle size reduction to <31,5 mm)	12
9.5 Sample division of <31,5 mm material	12
9.6 Particle size reduction of <31,5 mm material to <1 mm	12
9.7 Sample division of <1 mm material	13
9.8 Particle size reduction of <1 mm material to <0,25 mm	13
10 Storage and labelling	13
11 Performance characteristics	13
Annex A (informative) Precision in relation to division method	14
Annex B (informative) Scheme of sample preparation for samples from single delivery	19
Annex C (informative) Scheme of sample preparation for samples from continuous delivery	20
Bibliography	22

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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 238, *Solid biofuels*.

Introduction

Biofuels are a major source of renewable energy. International standards are needed for production, trade and use of solid biofuels. For sampling of solid biofuels, see ISO 18135.

This document can be used in regard to production, controlling and analysis of solid biofuels in general.

This document was developed with significant content from EN 14780:2011.

Solid biofuels — Sample preparation

1 Scope

This document defines methods for reducing combined samples (or increments) to laboratory samples and laboratory samples to sub-samples and general analysis samples and is applicable to solid biofuels.

The methods defined in this document can be used for sample preparation, for example, when the samples are to be tested for calorific value, moisture content, ash content, bulk density, durability, particle size distribution, ash melting behaviour, chemical composition, and impurities.

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

ISO 16559, *Solid biofuels — Terminology, definitions and descriptions*

ISO 18134-1, *Solid biofuels — Determination of moisture content — Oven dry method — Part 1: Total moisture — Reference method*

ISO 18134-2, *Solid biofuels — Determination of moisture content — Oven dry method — Part 2: Total moisture — Simplified procedure*

ISO 18135, *Solid Biofuels — Sampling*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16559 and the following apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

nominal top size

aperture size of the sieve through which at least 95 % by mass of the material passes

Note 1 to entry: For pellets (and other long materials), the diameter is used to determine the nominal top size.

Note 2 to entry: Includes additional information not found in ISO 16559.