

INTERNATIONAL STANDARD

ISO
1213-2

First edition
1992-04-01

Solid mineral fuels — Vocabulary —

Part 2:

Terms relating to sampling, testing and analysis

Combustibles minéraux solides — Vocabulaire —

*Partie 2: Termes relatifs à l'échantillonnage, l'essai et l'analyse du
charbon*



Reference number
ISO 1213-2:1992(E)

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 1213-2 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*.

It cancels and replaces ISO Recommendations R 1213-2:1971 and R 1213-3:1971, of which it constitutes a technical revision.

ISO 1213 consists of the following parts, under the general title *Solid mineral fuels* — *Vocabulary*:

- Part 1: *Terms relating to coal preparation*
- Part 2: *Terms relating to sampling, testing and analysis*

© ISO 1992

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Solid mineral fuels — Vocabulary —

Part 2:

Terms relating to sampling, testing and analysis

1 Scope

This part of ISO 1213 defines terms commonly employed in the sampling, testing and analysis of solid mineral fuels.

Alternative names are given for several terms: in some cases, however, the use of the alternative name is deprecated (as indicated).

An alphabetical index, with numerical cross-reference is provided.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 1213. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 1213 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*.

ISO 3310-1:1990, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*.

3 Terms and definitions

3.1 abrasion: Loss of material from particle surfaces of a solid mineral fuel, or from other surfaces in contact with the particles, caused by friction between contacting surfaces.

3.2 abrasion index: The total mass lost by the abrasion of four carbon steel blades when rotated in a specified mass of a solid mineral fuel under specified conditions, expressed in milligrams of metal lost per kilogram of solid mineral fuel.

3.3 accuracy: The closeness of agreement between an observation and the “true” value.

NOTE 1 The accuracy of a result should not be confused with its *precision*.

3.4 adventitious ash; extraneous ash (deprecated): Ash arising from *mineral matter* associated with, but not inherent in, a solid mineral fuel.

3.5 air-dried basis: A means of expressing an analytical result based on the condition in which a solid mineral fuel is in equilibrium with atmospheric humidity.

NOTE 2 The solid mineral fuel in this state is composed of residual moisture, *mineral matter* and organic matter.

3.6 anthracite: Coal of high rank, with a low *volatile matter* content and a semi-metallic lustre, and which does not soften or swell when heated.

3.7 apparent relative density: The ratio of the mass of a dry solid mineral fuel to the mass of a volume of water equal to the apparent volume of the solid mineral fuel at a specified temperature.

NOTE 3 The apparent relative density should not be confused with the *bulk density* (see 3.21).

3.8 ash: The residue obtained by incineration of a solid mineral fuel under specified conditions.

3.9 ash analysis: The analysis of *ash* for its elemental composition.

NOTE 4 The elements usually determined are silicon, aluminium, iron, magnesium, titanium, calcium, sodium, potassium, phosphorus and sulfur, and these are usually expressed as oxides.

3.10 ash fusibility: Characteristic physical state of the *ash* obtained by heating under specified conditions.

NOTES

5 Ash fusibility is determined under either oxidizing or reducing conditions.

6 See also *deformation interval* (3.43), *deformation temperature* (3.44), *flow temperature* (3.58), *hemisphere temperature* (3.76) and *melting interval* (3.100).

3.11 ash viscosity: A measure of the resistance to flow of *ash* in the fused state.

3.12 base/acid ratio: The ratio of the mass of basic oxides [iron(III) oxide, calcium oxide, magnesium oxide, disodium oxide and dipotassium oxide] to the mass of acidic oxides [silica, aluminium oxide and titanium (IV) oxide] in *ash*.

NOTE 7 This ratio can be used in the determination of the *fouling factor* and the *slagging factor*.

3.13 batch: A quantity of a solid mineral fuel produced at one time under relatively uniform conditions.

3.14 bias: A systematic *error* which leads to results which are persistently higher or persistently lower than the "true" value.

3.15 bituminous coal: A general descriptive term for *coal* of *rank* between *anthracite* and *brown coal/lignite*.

NOTES

8 The vitrinites in all coals in the bituminous range melt and form a *coke* when the coal is heated above 400 °C in the absence of air.

9 In some countries coals of *rank* immediately below that of *bituminous coal* are referred to as sub-bituminous coals.

3.16 blast furnace coke: Strong, large *coke* for use in blast furnaces.

NOTES

10 Blast furnace coke is generally produced from blends of *bituminous coals*, which may incorporate additives.

11 Blast furnace coke usually has a low *reactivity* to carbon dioxide.

3.17 bottom size; lower size: The size corresponding to the 95 percentile on the cumulative *size distribution* curve of a material, i.e. the largest sieve size on which 95 % of the material is retained.

tribution curve of a material, i.e. the largest sieve size on which 95 % of the material is retained.

3.18 breakage: *Particle size reduction* resulting from impact and/or compression.

3.19 breeze: The undersize after separating the smallest size of *graded coke*.

NOTE 12 Breeze is usually less than 10 mm in size.

3.20 brown coal and lignite: Coals of low *rank* characterized by high inherent moisture, high *volatile matter* and low calorific value.

NOTE 13 In some countries the terms are used to describe all low *rank* coals up to *bituminous coals*. In other countries the coals at the higher end of the range are referred to as sub-bituminous coals.

3.21 bulk density: The mass of a portion of a solid mineral fuel divided by the volume of the container which is filled by that portion under specified conditions.

3.22 carbominerite: Collective term for intergrowths of minerals and *macerals*.

NOTE 14 The various types of carbominerite with their compositions are given in table 1.

Table 1 — Types and compositions of carbominerite

Type	Volume percentage of minerals
Carbargillite	20 to 60, clay minerals
Carbopyrite	5 to 20, sulfides
Carbankerite	20 to 60, carbonates
Carbosilicite	20 to 60, quartz
Carbopolyminerite ¹⁾	20 to 60, various minerals
1) The term is used also for carbopolyminerite containing a maximum of 5 % of mineral matter, provided that sulfides form a substantial part of the mineral matter.	

3.23 carbon in mineral matter: The carbon in the *mineral matter* carbonates of a solid mineral fuel.

3.24 carboxyreactivity: The rate of reaction of a solid mineral fuel with carbon dioxide under specified conditions.

3.25 char: The solid, partially or non-agglomerated carbonaceous material produced by the pyrolysis of solid mineral fuels.

3.26 chute: An inclined trough for conveying solid mineral fuel to a lower level.