
Hard coal — Froth flotation testing —
Part 1:
Laboratory procedure

Houille — Essais de flottation —
Partie 1: Méthode de laboratoire



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Published in Switzerland

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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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*, Subcommittee SC 1, *Coal preparation: Terminology and performance*.

This second edition cancels and replaces the first edition (ISO 8858-1:1990), of which it constitutes a minor revision. It also incorporates the Technical Corrigendum ISO 8858-1:1990/Cor.1:2001.

A list of all parts in the ISO 8858 series can be found on the ISO website.

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 froth flotation of coal has widespread application for the concentration and separation of fine coal particles from mineral matter. The response of coal to the froth flotation process is initially measured by a laboratory scale test. Although the principles used for the laboratory tests are generally similar, the precise type of equipment and techniques used vary considerably.

The procedure for the laboratory froth flotation test sets out, in detail, the type of equipment to be used and the methods to be adopted. The purpose of this procedure is to provide a standard method of test by which a preliminary evaluation of the froth flotation characteristics of a coal can be compared. This need is particularly important for exploration programmes. This document also serves as an introduction for operators who are not familiar with the techniques (and problems) associated with the laboratory froth flotation of coals.

[Annex A](#) of this document is for information only.

Hard coal — Froth flotation testing —

Part 1: Laboratory procedure

1 Scope

This document sets out a laboratory procedure for the froth flotation testing of fine coal, e.g. coal of particle size less than 0,5 mm. The procedure provides a means of evaluating the general flotation characteristics of a coal under a set of specified standard conditions, and will not necessarily indicate the full flotation potential of that coal.

The flotation characteristics of coals are sensitive to changes in flotation conditions. These conditions can be changed by varying basic parameters such as flotation time, reagent and dosage rate. Separate flotation tests are used to assess the effect of varying these parameters to determine the best flotation conditions for a particular coal. A method of evaluating flotation response will be given in a separate standard.

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 648, *Laboratory glassware — Single-volume pipettes*

ISO 1171, *Solid mineral fuels — Determination of ash*

ISO 11722, *Solid mineral fuels — Hard coal — Determination of moisture in the general analysis test sample by drying in nitrogen*

ISO 1213-1, *Solid mineral fuels — Vocabulary — Part 1: Terms relating to coal preparation*

ISO 13909-1, *Hard coal and coke — Mechanical sampling — Part 1: General introduction*

ISO 13909-2, *Hard coal and coke — Mechanical sampling — Part 2: Coal — Sampling from moving streams*

ISO 13909-3, *Hard coal and coke — Mechanical sampling — Part 3: Coal — Sampling from stationary lots*

ISO 13909-4, *Hard coal and coke — Mechanical sampling — Part 4: Coal — Preparation of test samples*

ISO 18283, *Hard coal and coke — Manual sampling*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1213-1 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/>