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Coal sizing equipment — Performance evaluation

Équipement pour la granulométrie du charbon — Évaluation de l'aptitude à l'emploi

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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 document 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 27, *Coal and coke*, Subcommittee SC 1, *Coal preparation: Terminology and performance*.

This third edition cancels and replaces the second edition (ISO 10752:2019), which has been technically revised.

The main changes are as follows:

— Clause 2 normative references updated;

— data sheets converted to tables.

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.

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Introduction

A standard expression of performance is used to define the accuracy of separation of a particular item, to assist in the comparison of the performance of different items of coal sizing equipment and in the prediction of separation results.

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Coal sizing equipment — Performance evaluation

1 Scope

This document describes the principles and methods for the expression of results of performance tests on sizing equipment used in coal preparation and includes methods for the evaluation of performance parameters. Performance test procedures and size measurement techniques are recommended.

This document applies to all types of sizing equipment, categorized as follows:

a) screens;

b) classifiers;

c) others.

The procedure described in this document applies to two-product separations. Performance assessment of multiproduct separations can be achieved by consideration of a series of two-product separations.

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 1213-1, *Coal and coke — Vocabulary — Part 1: Terms relating to coal preparation*

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

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

ISO 18283, *Coal and coke — Manual sampling*

ISO 20904, *Hard coal — Sampling of slurries*

3 Terms and definitions

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

3.1 General terms

3.1.1
actual feed
F
material fed to the sizing equipment during the test period and including any recirculated material

3.1.2
coarser material
material that is coarser than the reference size

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3.1.3
finer material
material that is finer than the reference size

3.1.4
product
material discharged from the sizing equipment prior to any further treatment or recirculation

3.1.5
coarser product
c
product of size separation that contains a greater proportion of coarser material than the feed

3.1.6
finer product
f
product of size separation that contains a greater proportion of finer material than the feed

3.1.7
sharpness of separation
E_p
assessment of the deviation from a perfect separation

Note 1 to entry: Usually expressed in terms of mean probable error (often identified in technical reports as E_{pm}).

3.2 Performance parameters terms

3.2.1
theoretical yield
maximum yield of a product at a reference size, as determined from the size distribution curve for the reconstituted feed

3.2.2
coarser material placement efficiency
E_c
percentage of coarser material in the reconstituted feed that reports to the coarser product

3.2.3
finer material placement efficiency
E_f
percentage of finer material in the reconstituted feed that reports to the finer product

3.2.4
overall separation index
sum of the coarser material placement efficiency and the finer material placement efficiency minus 100

4 Performance criteria

The following criteria should be determined where applicable:

a) feed rate;

b) reference size of separation;

c) sharpness of separation;

d) misplaced material;

e) material placement efficiencies;

f) the degree of difficulty of separation;

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