



BSI Standards Publication

Coal and coke — Mechanical sampling

Part 5: Sampling of coke from moving streams

National foreword

This British Standard is the UK implementation of ISO 13909-5:2025. It supersedes BS ISO 13909-5:2016, which is withdrawn.

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sampling —**

**Part 5:
Sampling of coke from moving
streams**

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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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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, *Coal and coke*, Subcommittee SC 4, *Sampling*.

This third edition cancels and replaces the second edition (ISO 13909-5:2016), which has been technically revised.

The main changes are as follows:

- the title has been modified and aligned with the rest of the ISO 13909 series;

A list of all parts in the ISO 13909 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.

Coal and coke — Mechanical sampling —

Part 5: Sampling of coke from moving streams

1 Scope

This document specifies procedures and requirements for the design and establishment of sampling schemes for the mechanical sampling of coke from moving streams and the methods of sampling used.

The diversity of types of equipment for sampling and the conditions under which mechanical sampling is performed make it inappropriate to specify standard designs for samplers which will be applicable to all situations.

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 13909-1:2025, *Coal and coke — Mechanical sampling — Part 1: General introduction*

ISO 13909-6, *Coal and coke — Mechanical sampling — Part 6: Preparation of test samples of coke*

ISO 13909-7, *Coal and coke — Mechanical sampling — Part 7: Methods for determining the precision of sampling, sample preparation and testing*

ISO 13909-8, *Coal and coke — Mechanical sampling — Part 8: Methods of testing for bias*

ISO 21398, *Hard coal and coke — Guidance to the inspection of mechanical sampling systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13909-1 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/>

4 Establishing a sampling scheme

4.1 General

The general procedure for establishing a sampling scheme is as follows:

- a) define the quality parameters to be determined and the types of samples required;
- b) define the lot;
- c) define or assume the precision required (see [4.3.1](#));

- d) determine the method of combining the increments into a sample, or number of sub-lot samples, and the method of sample preparation (see ISO 13909-6);
- e) determine or assume the variability of the coke (see [4.3.2](#)) and the variance of preparation and testing (see [4.3.3](#)). Methods for determining variability and the variance of preparation and testing are given in ISO 13909-7;
- f) establish the number of sub-lots and the number of increments per sub-lot required to attain the desired precision (see [4.3.4](#));
- g) define the sampling interval (see [Clause 5](#));
- h) ascertain the nominal top size of the coke for the purpose of determining the minimum mass of sample (see [4.4](#) and [Table 1](#)). The nominal top size may initially be ascertained by consulting the consignment details, or by visual estimation, and may be verified, if necessary, by preliminary test work;
- i) determine the minimum average increment mass (see [4.5](#)).

4.2 Design of the sampling scheme

4.2.1 Material to be sampled

The first stage in the design of the scheme is to identify the cokes to be sampled. Samples can be required for technical evaluation, process control, quality control, and for commercial reasons by both the producer and the customer. It is essential to ascertain exactly at what stage in the coke-handling process the sample is required and, as far as practicable, design the scheme accordingly.

4.2.2 Parameters to be determined on samples

The samples for moisture and physical tests may be collected separately or as one sample, which is then divided. In this document, a sample which is collected for the determination of moisture (and possibly also for general analysis) is referred to as the moisture sample; a sample which is collected for physical tests only is referred to as the physical sample. If a sample is used for the determination of moisture and for physical tests, it is referred to as a common sample.

In mechanical sampling of coke, the only sample which can, in certain circumstances (see [4.2.6](#)), be processed automatically beyond the divided-increment stage is the moisture sample.

In order to achieve the desired precision, it may be necessary to take different numbers of increments for the moisture and physical samples. Where a common sample is taken, the greater number of increments shall be used.

4.2.3 Division of lots

A lot may be sampled as a whole or as a series of sub-lots, e.g. coke dispatched or delivered over a period of time, a ship load, a train load, a wagon load, or coke produced in a certain period, e.g. a shift.

It can be necessary to divide a lot into a number of sub-lots in order to improve the precision of the results.

For lots sampled over long periods, it can be expedient to divide the lot into a series of sub-lots, obtaining a sample for each.

4.2.4 Basis of sampling

Sampling may be carried out on either a time-basis or a mass-basis.

In time-basis sampling, increments are taken at fixed time intervals with an increment mass, collected with a fixed speed cutter, which is proportional to the flow rate at the time of extraction.