
Iron ores — Sampling and sample preparation procedures

*Minerais de fer — Procédures d'échantillonnage et de préparation des
échantillons*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 3082 was prepared by Technical Committee ISO/TC 102, *Iron ore and direct reduced iron*, Subcommittee SC 1, *Sampling*.

This fourth edition cancels and replaces the third edition (ISO 3082:2000), of which it constitutes a technical revision.

Iron ores — Sampling and sample preparation procedures

WARNING — This International Standard may involve hazardous materials, operations and equipment, and does not purport to address all the safety issues associated with its use. It is the responsibility of the user of this International Standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard gives

- a) the underlying theory,
- b) the basic principles for sampling and preparation of samples, and
- c) the basic requirements for the design, installation and operation of sampling systems

for mechanical sampling, manual sampling and preparation of samples taken from a lot under transfer, to determine the chemical composition, moisture content, size distribution and other physical and metallurgical properties of the lot, except bulk density obtained using ISO 3852:2007 (Method 2).

The methods specified in this International Standard are applicable to both the loading and discharging of a lot by means of belt conveyors and other ore-handling equipment to which a mechanical sampler may be installed or where manual sampling may safely be conducted.

The methods are applicable to all iron ores, whether natural or processed (e.g. concentrates and agglomerates, such as pellets or sinters).

2 Normative references

The following referenced documents are indispensable for the application 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 3084, *Iron ores — Experimental methods for evaluation of quality variation*

ISO 3085:2002, *Iron ores — Experimental methods for checking the precision of sampling, sample preparation and measurement*

ISO 3086, *Iron ores — Experimental methods for checking the bias of sampling*

ISO 3087, *Iron ores — Determination of moisture content of a lot*

ISO 3271, *Iron ores for blast furnace and direct reduction feedstocks — Determination of the tumble and abrasion indices*

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

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

ISO 3852:2007, *Iron ores for blast furnace and direct reduction feedstocks — Determination of bulk density*

ISO 4695, *Iron ores for blast furnace feedstocks — Determination of the reducibility by the rate of reduction index*

ISO 4696-1, *Iron ores for blast furnace feedstocks — Determination of low-temperature reduction-disintegration indices by static method — Part 1: Reduction with CO, CO₂, H₂ and N₂*

ISO 4696-2, *Iron ores for blast furnace feedstocks — Determination of low-temperature reduction-disintegration indices by static method — Part 2: Reduction with CO and N₂*

ISO 4698, *Iron ore pellets for blast furnace feedstocks — Determination of the free-swelling index*

ISO 4700, *Iron ore pellets for blast furnace and direct reduction feedstocks — Determination of the crushing strength*

ISO 4701, *Iron ore and direct reduced iron — Determination of size distribution by sieving*

ISO 7215, *Iron ores for blast furnace feedstocks — Determination of the reducibility by the final degree of reduction index*

ISO 7992, *Iron ores for blast furnace feedstocks — Determination of reduction under load*

ISO 8371, *Iron ores for blast furnace feedstocks — Determination of the decrepitation index*

ISO 11256, *Iron ore pellets for shaft direct-reduction feedstocks — Determination of the clustering index*

ISO 11257, *Iron ores for shaft direct-reduction feedstocks — Determination of the low-temperature reduction-disintegration index and degree of metallization*

ISO 11258, *Iron ores for shaft direct-reduction feedstocks — Determination of the reducibility index, final degree of reduction and degree of metallization*

ISO 11323, *Iron ore and direct reduced iron — Vocabulary*

ISO 13930, *Iron ores for blast furnace feedstocks — Determination of low-temperature reduction-disintegration indices by dynamic method*

3 Terms and definitions

For the purposes of this document, the terms and definitions contained in ISO 11323, as well as those given below, apply.

3.1

lot

discrete and defined quantity of iron ore and direct reduced iron for which quality characteristics are to be assessed

3.2

increment

quantity of iron ore and direct reduced iron collected in a single operation of a device for sampling or sample division

3.3

sample

relatively small quantity of iron ore and direct reduced iron, so taken from a lot as to be representative in respect of the quality characteristics to be assessed