INTERNATIONAL STANDARD

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Iron ores for blast furnace and direct reduction feedstocks — Determination of bulk density

Minerais de fer pour charges de hauts fourneaux et pour procédés par réduction directe — Détermination de la masse volumique apparente

Reference number
ISO 3852:2007(E)

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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 3852 was prepared by Technical Committee ISO/TC 102, *Iron ore and direct reduced iron*, Subcommittee SC 3, *Physical testing*.

This third edition cancels and replaces the second edition (ISO 3852:1988), which has been revised to homogenise with other physical test standards.

Introduction

This is one of a number of physical test methods that have been developed to measure various physical parameters and to evaluate the behaviour of iron ores including reducibility, disintegration, crushing strength, apparent density, etc. This method was developed to provide a uniform procedure, validated by collaborative testing, to facilitate comparisons of tests made in different laboratories.

The results of this test should be considered in conjunction with other tests used to evaluate the quality of iron ores as feedstocks for blast furnace and direct reduction processes.

This International Standard may be used to provide test results as part of a production quality-control system, as a basis of a contract, or as part of a research project.

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

1 Scope

This International Standard specifies two methods of determining the bulk density of iron ores.

Method 1 is applicable to natural iron ore and processed iron ore having a nominal top size of 40 mm.

Method 2 is applicable to any natural iron ores and processed ores, regardless of size.

NOTE The measured density does not necessarily represent the bulk density of compacted or stockpiled iron ores.

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 3082:2000, *Iron ores — Sampling and sample preparation procedures*[1)]

ISO 3087:1998, *Iron ores — Determination of moisture content of a lot*

ISO 4701:—[2)], *Iron ores and direct reduced iron — Determination of size distribution by sieving*

ISO 11323:2002, *Iron ore and direct reduced iron — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11323 apply.

4 Principle

A test portion is introduced into a container of known volume until its surface is level. The bulk density is calculated as the ratio of the mass of the sample to the internal volume of the container.

[1)] Under revision to incorporate ISO 10836, *Iron ores — Method of sampling and sample preparation for physical testing.*

[2)] To be published. (Revision of ISO 4701:1999)