
**Direct reduced iron — Determination of
apparent density and water absorption of
hot briquetted iron (HBI)**

*Minerais du fer prééduits — Détermination de la masse volumique
apparente et de l'absorption d'eau du fer briqueté à chaud*



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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15968 was prepared by Technical Committee ISO/TC 102, *Iron ore and direct reduced iron*, Subcommittee SC 5, *Physical testing of direct reduction feedstock and DRI*.

Annexes A and B form a normative part of this International Standard.

Introduction

The international trade of hot briquetted iron (HBI) as a merchant commodity is increasing rapidly and is expected to grow beyond 10 million tonnes per annum in the twenty-first century. This has led to the need for the development of test method standards for HBI.

This International Standard specifies a method for the determination of the apparent density of HBI. The test gives a measurement of apparent density which is useful as a test of briquetting machine performance, as a measure of briquette quality, and may be used as part of a programme to certify that HBI meets the requirements of the International Maritime Organization (IMO) Code of Safe Practice for Solid Bulk Cargoes.

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CAUTION – This International Standard may involve hazardous materials, operations and equipment. This International Standard does not purport to address all of the safety problems 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 use.

1 Scope

This International Standard specifies a method for the determination of the apparent density and water absorption of hot briquetted iron (HBI).

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3082:—¹⁾, *Iron ores — Sampling and sample preparation procedures*.

ISO 3310-1:2000, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*.

ISO 3310-2:1999, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*.

ISO 10835:1995, *Direct reduced iron — Sampling and sample preparation — Manual methods for reduced pellets and lump ores*.

ISO 11323:1996, *Iron ores — Vocabulary*.

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 11323 and the following apply.

3.1

open pores

those pores that are penetrated when immersed in water

3.2

closed pores

those pores that are not penetrated when immersed in water

1) To be published. (Revision of ISO 3082:1998)