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Iron ores — Determination of the moisture content of a lot

Minerais de fer — Détermination de l'humidité d'un lot

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Foreword

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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 documents 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 102, *Iron ore and direct reduced iron*, Subcommittee SC 1, *Sampling*.

This fifth edition cancels and replaces the fourth edition (ISO 3087:2011), which has been technically revised. The main changes compared with the previous edition are as follows:

— the existing two 105 °C moisture determination methods have been confirmed to serve as reference methods;

— alternative moisture determination methods are now allowed if they can be shown to result in equivalent moisture contents as the reference methods;

— the weighing device readability requirement has been changed from 0,05 % to 0,01 % equivalent of test portion mass;

— Clause 9 has been revised;

— Annex D has been updated with new example reports.

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

Currently, large tonnages of iron ore are traded internationally and a small error in the measured moisture content [mass fraction (%)] of a lot has a considerable effect on the commercial transaction. The correct determination of moisture content of a lot is, therefore, a matter of importance for both the purchaser and the vendor.

This document does not address the determination of the hygroscopic moisture content of a test sample for chemical analysis. If the hygroscopic moisture content is required to be determined, reference should be made to ISO 2596:2006.

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Iron ores — Determination of the moisture content of a lot

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1 Scope

This document specifies a method for the determination of the moisture content of a lot of iron ore. This method is applicable to all iron ores, whether natural or processed.

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 3082, *Iron ores — Sampling and sample preparation procedures*

ISO 3085, *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 11323, *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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

Dry the test portion in air at 105 °C and measure the loss in mass. Express the moisture content as the mass loss relative to the original mass of the sample as a mass fraction (%).

5 Apparatus

5.1 Drying pan, with a smooth surface, free from contamination and capable of accommodating the specified quantity of a test portion in a layer of nominal thickness not greater than 31,5 mm.

5.2 Drying oven, equipped with a temperature indicator and control apparatus capable of regulating the temperature at any point in the oven at 105 °C ± 5 °C and so designed as to maintain this temperature with a current of air to ensure efficient drying but without any loss of sample, and fitted with a fan that allows for both the circulation and change of air.

5.3 Weighing device, with readability equivalent to at least 0,01 % of the Table 1 minimum test portion mass. The weighing device should be protected from the influence of heat.

The capacity of the weighing device shall be enough for the combined mass of the drying pan and the initial mass of the test portion.

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