

Methods of testing iron ores —

Part 1: Determination of moisture content

[ISO title: Iron ores — Determination of moisture content of a
consignment]

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Committees responsible for this British Standard

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- British Steel Industry
- Institution of Mining and Metallurgy
- Mechanical Handling Engineers' Association

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National foreword

This Part of BS 5663 has been prepared under the direction of the Iron and Steel Standards Committee. It supersedes BS 5663:1979, which is withdrawn. It is identical with ISO 3087:1987 “*Iron ores — Determination of moisture content of a consignment*”, published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “Part of BS 5663”.

Cross-references

International Standard	Corresponding British Standard
	BS 5660 <i>Methods of sampling iron ores</i>
ISO 3081:1986	Part 1:1987 <i>Manual method of increment sampling</i> (Identical)
ISO 3082:1987	Part 2: 1987 <i>Mechanical method of increment sampling and sample preparation</i> (Identical)
ISO 3083:1986	BS 5661:1987 <i>Method for preparation of samples of iron ores by manual means</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

At present, large tonnages of iron ores are traded internationally and, therefore, the smallest difference in the measured moisture content (percentage by mass) of the same consignment has a considerable effect on transaction of iron ores. The correct determination of moisture content of a consignment is, therefore, a matter of importance for both the purchaser and the vendor.

This second edition of ISO 3087 contains the following major amendments:

- a) the inclusion of a test sample having a particle size of less than 31,5 mm;
- b) the inclusion of Annex B, which deals with methods for correction for sprinkled water and/or rain-water.

This International Standard does not aim to determine the hygroscopic moisture content of the test sample for chemical analysis. If the hygroscopic moisture content is required, see ISO 2596, *Iron ores — Determination of hygroscopic moisture in analytical samples — Gravimetric and Karl Fischer methods*.

This International Standard contains three annexes:

- Annex A specifies a method to be used when it is difficult to conduct sieving, crushing and division owing to a sample being adhesive or excessively wet. In this case the sample may be pre-dried until preparation can be conducted without difficulty, and the pre-dried moisture content of a consignment determined by the procedure specified in Annex A.
- Annex B specifies methods of correction for sprinkled water and/or rain-water. In the event that a consignment is subjected to rain-water and/or sprinkled water to control dust emission, then the moisture content of the consignment should be corrected for this added water in accordance with Annex B.
- Annex C shows, for information, the precision of moisture measurement of the method specified in this International Standard.

1 Scope and field of application

This International Standard specifies a method for the determination of the moisture content of a consignment of iron ore.

This method is applicable to all iron ores, whether natural or processed (for example concentrates and agglomerates such as pellets, sinters or briquettes). However, some limonites, sulfides, and certain ores containing a high content of combined water may give erroneous results of moisture determination under the conditions specified.

2 References

ISO 3081, *Iron ores — Increment sampling — Manual method*.

ISO 3082, *Iron ores — Increment sampling and sample preparation — Mechanical method*.

ISO 3083, *Iron ores — Preparation of samples — Manual method*.

3 Definitions

For the purpose of this International Standard, the following definitions apply.

3.1 moisture sample

the sample taken for determination of the moisture content of the consignment or part of the consignment

3.2 test sample

a sample ready for moisture determination which is prepared from each increment, from each subsample, or from the gross sample in accordance with the specified method for the moisture sample

3.3 test portion

a representative part of a test sample which is actually subjected to moisture measurement
if the entire quantity of a test sample is subjected to moisture measurement, the test sample may also be called “test portion”

4 Principle

Drying of the test sample in air at 105 °C to constant mass. Determination of the moisture content by establishing the loss in mass of the sample when heated at 105 °C.