INTERNATIONAL STANDARD ISO 3852

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Iron ores (maximum particle size 40 mm or smaller) — Determination of bulk density

Minerais de fer (particules de dimension granulométrique maximale inférieure ou égale à 40 mm) — Détermination de la masse volumique apparente

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3852 was drawn up by Technical Committee ISO/TC 102, *Iron ores*, and was circulated to the Member Bodies in June 1975.

It has been approved by the Member Bodies of the following countries :

Australia	India	South Africa, Rep. of
Austria	Iran	Sweden
Belgium	Italy	Turkey
Brazil	Japan	United Kingdom
Canada	Mexico	U.S.A.
Czechoslovakia	New Zealand	U.S.S.R.
France	Portugal	Yugoslavia
Germany	Romania	

No Member Body expressed disapproval of the document.

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Iron ores (maximum particle size 40 mm or smaller) — Determination of bulk density

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the bulk density of natural and processed iron ores using a calibrated measure.

This method is applicable to samples having a maximum particle size of 40 mm or smaller.

NOTE — The method of determining the bulk density of samples having a maximum particle size of over 40 mm is specified in ISO 5464, *Iron ores — Determination of bulk density using a large container.*[1)]

2 REFERENCES

ISO 565, *Test sieves — Woven metal wire cloth and perforated plate — Nominal sizes of apertures.*

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

ISO 3082, *Iron ores — Increment sampling — Mechanical method.*[1)]

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

ISO 3087, *Iron ores — Determination of moisture content.*

ISO 4701, *Iron ores — Determination of size distribution by sieving.*[1)]

3 DEFINITION

For the purposes of this International Standard, the following definitions apply :

3.1 maximum particle size : The size of aperture of the sieve on which approximately 5 % by mass of an iron ore is retained.

3.2 bulk density : The mass in air of a unit volume of an iron ore, including the voids within and between the particles.

4 APPARATUS

4.1 Measure for bulk density, consisting of a cylindrical metal container having an internal diameter of 400 ± 2 mm and an internal height of 400 ± 2 mm.

The container shall be constructed of metal of sufficient thickness to ensure the rigidity of the walls and the base of the container under the conditions of the test.

The container shall be reinforced by a steel band around the outside periphery at the top, and shall have two handles, 180° apart, attached to the outer surface by welding. A carriage or other suitable device may be provided to facilitate transportation of the measure within the laboratory.

The volume of the measure, in litres, shall be determined with a precision of 0,1 l using potable water of known density.

4.2 Weighing device, having a sensitivity of 1/1 000 or better, and a capacity adequate for the masses to be determined.

4.3 Test sieves, of square aperture, conforming to ISO 565.

4.4 Drying oven, suitably ventilated, capable of being maintained at 105 ± 5 °C and of sufficient size to accommodate the test sample.

4.5 Shovel, No. 50 in accordance with 5.3 of ISO 3081.

5 SAMPLE

5.1 Obtain the sample for the bulk density test from the sample for physical testing prepared in accordance with ISO 3083.

5.2 Obtain a sufficient quantity of each sample for the test to fill the measure (4.1) in one operation, until it overflows. Prepare three separate test samples.

1) In preparation.