IS 7190-2 (2004): Coke - Methods of Test, Part 2: Determination of Bulk Density in a Large Container [PCD 7: Solid Mineral Fuels]

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IS 7190 (Part 2) : 2004
ISO 1013 : 1995

भारतीय मानक

कोक — परीक्षण पद्धतियाँ

भाग 2 बड़े कन्टेनरों में स्थूल घनत्व ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

COKE — METHODS OF TEST

PART 2 DETERMINATION OF BULK DENSITY IN A LARGE CONTAINER

(First Revision)

ICS 75.160.10

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 2004

Price Group 1

NATIONAL FOREWORD

This Indian Standard (Part 2) (First Revision) which is identical with ISO 1013 : 1995 'Coke — Determination of bulk density in a large container' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Solid Mineral Fuels Sectional Committee and approval of the Petroleum, Coals and Related Products Division Council.

This Indian Standard was first published in 1974 covering the methods of determination of bulk density of coke in a small container (based on ISO/R 567 : 1967) and determination of bulk density of coke in a large container (based on ISO/R 1013 : 1969) respectively. Since ISO/R 567 and ISO/R 1013 have subsequently been published as ISO 567 : 1974 and ISO 1013 : 1975 respectively and revised in the year 1995, the Committee decided to revise this Indian Standard in two parts with the adoption of the ISO 567 and ISO 1013 under dual numbering system. Consequently the designation and title of the standard has been modified as follows:

IS 7190 (Part 1)/ISO 567 : 1995 Coke — Methods of test: Part 1 Determination of bulk density in a small container

IS 7190 (Part 2)/ISO 1013 : 1995 Coke — Methods of test: Part 2 Determination of bulk density in a large container

This Indian Standard (Part 2) covers the method for the determination of bulk density in a large container. Method for determination of bulk density in a small container is covered in IS 7190 (Part 1).

The text of ISO Standard has been proposed to be approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

CROSS REFERENCES

In this adopted standard reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated. However, that International Standard cross-referred in this adopted ISO Standard which has subsequently been revised, position in respect of latest ISO Standard has been given:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 567 : 1995 Coke — Determination of bulk density in a small container	IS 7190 (Part 1) : 2004 Coke — Methods of test: Part 1 Determination of bulk density in a small container (*first revision*)	Identical
ISO 579 : 1999 Coke — Determination of total moisture	IS 1350 (Part 1) : 1984 Methods of test for coal and coke: Part 1 Proximate analysis (*second revision*)	Technically not equivalent

The Technical Committee responsible for the preparation of this standard will review the provision of ISO 579 and will decide whether it is acceptable for use in conjunction with this standard.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

COKE — METHODS OF TEST

PART 2 DETERMINATION OF BULK DENSITY IN A LARGE CONTAINER

(First Revision)

1 Scope

This International Standard specifies a method for the determination of the bulk density of coke in a large container such as a wagon or skip.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 567:1995, *Coke — Determination of bulk density in a small container.*

ISO 579:1981, *Coke — Determination of total moisture content.*

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 bulk density: The mass of a portion of a solid mineral fuel divided by the volume of the container which is filled by that portion under specified conditions.

4 Principle

A weighed container of known volume is filled with coke and the increase in mass is determined.

5 Apparatus

5.1 Container, such as a wagon or skip, capable of holding at least 3 t of the coke.

5.2 Weighing machine, capable of weighing the container and its contents to an accuracy of 0,2 %.

6 Procedure

Weigh the empty container (5.1) on the weighing machine (5.2). Measure the internal dimensions of the container to the nearest 1 cm and calculate its capacity.

NOTE 1 If the container is already fully charged, it should be weighed with the coke first, then be weighed empty and then be measured.

With the container on a level surface, carefully charge the coke into it until pieces of coke project above the top of the container across the whole surface.

Slide a straightedge across the top of the container and remove any pieces of coke which obstruct its passage. Weigh the charged container.

7 Expression of results

The bulk density in a large container (ρ_l) of the coke, in kilograms per cubic metre, on a dry basis, is given by the equation:

$$\rho_l = \frac{m_2 - m_1}{V} \times \frac{100 - M}{100}$$

where

m_1 is the mass, in kilograms, of the empty container;

m_2 is the mass, in kilograms, of the container plus coke;

V is the capacity, in cubic metres, of the container;

M is the total moisture content of the coke, expressed as a percentage by mass, determined in accordance with ISO 579.

Report the result to three significant figures.

For calculation of the result on an "as sampled" basis, omit the correction factor for moisture, i.e. "(100 – M)/100", in the equation.

8 Precision

8.1 Repeatability limit

The results of two determinations, carried out at different times by the same operator with the same apparatus on samples from the same lot of coke, should not differ by more than 10 kg/m^3.

8.2 Reproducibility

No value for reproducibility can be quoted for determinations carried out on different sites because the transport of coke samples involves the risk of breakage and thus alteration of the size distribution and the bulk density.

9 Test report

The test report shall include the following:

a) the method used by reference to this International Standard;

b) a complete identification of the sample;

c) the date of the test;

d) the results expressed in accordance with clause 7;

e) any unusual features noted during the determination;

f) any operation not included in this International Standard, or regarded as optional.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. PCD 7 (1971).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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