INTERNATIONAL STANDARD 1013

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Coke — Determination of bulk density in a large container

Coke — Détermination de la masse volumique en vrac dans un récipient de grandes dimensions

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 27 has reviewed ISO Recommendation R 1013 and found it technically suitable for transformation. International Standard ISO 1013 therefore replaces ISO Recommendation R 1013-1969 to which it is technically identical.

ISO Recommendation R 1013 was approved by the Member Bodies of the following countries :

Australia	India	South Africa, Rep. of
Austria	Iran	Spain
Belgium	Israel	Switzerland
Brazil	Japan	Thailand
Canada	Korea, Rep. of	Turkey
Czechoslovakia	Netherlands	U.S.A.
Denmark	New Zealand	U.S.S.R.
Egypt, Arab Rep. of	Poland	Yugoslavia
France	Portugal	
Germany	Romania	

No Member Body expressed disapproval of the Recommendation.

The Member Body of the following country disapproved the transformation of ISO/R 1013 into an International Standard :

Czechoslovakia

Printed in Switzerland

Coke – Determination of bulk density in a large container

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the bulk density of coke in a large container[1)] such as a railway wagon or skip.

2 REFERENCE

ISO 579, *Coke – Determination of total moisture.*

3 PRINCIPLE

A weighed container of known volume is filled with coke in such a way as substantially to prevent breakage. The upper surface of the coke is levelled and the increase in mass is determined.

4 APPARATUS

4.1 Container, large, such as a railway wagon or skip. The container shall hold at least 3 tonnes of the coke.

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

5 SAMPLE

The sample shall be representative of the consignment of coke.

6 PROCEDURE

Weigh the empty container. Calculate its internal volume to an accuracy of 1 %.

With the container on a level surface, carefully charge the coke into it until the whole surface of the coke projects above the top of the container. Slide a straight edge across the top of the container and remove any pieces of coke which obstruct its passage. Re-weigh the container.

Carry out a duplicate determination by repeating the procedure, using a subsequent wagon or skip of similar capacity.

7 EXPRESSION OF RESULTS

The bulk density of the coke, in tonnes per cubic metre, on a dry basis, is given by the formula

$$\frac{m_1 - m_0}{V} \times \frac{100 - M}{100}$$

where

m_0 is the mass, in tonnes, of the container;

m_1 is the mass, in tonnes, of the container plus coke;

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

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

The result, preferably the mean of duplicate determinations (see clause 8), shall be reported to three significant figures. When reported without qualification, the bulk density is understood to be expressed on the dry basis; where the bulk density as sold is required, the factor $\frac{100 - M}{100}$ should be omitted from the above calculation and the result reported with the qualification "wet basis", "as sold" or "as received", as appropriate.

8 PRECISION OF THE METHOD

Bulk density	Maximum acceptable difference between results	
	Repeatability	Reproducibility
	0,01 t/m³	(see 8.2)

1) See also ISO 567, *Coke – Determination of bulk density in a small container.*

8.1 Repeatability

The results of duplicate determinations, carried out at different times by the same operator with the same apparatus on samples from the same consignment of coke, shall not differ by more than the above value.

8.2 Reproducibility

No tolerance is quoted for determinations carried out on different sites because the transport of a coke sample involves the risk of breakage, with consequent alteration of the size distribution and the bulk density.

9 TEST REPORT

The test report shall include the following particulars :

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual features noted during the determination;

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