INTERNATIONAL STANDARD 616

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Coke — Determination of shatter indices

Coke — Détermination des indices de chute

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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 616 was developed by Technical Committee ISO/TC 27, *Solid mineral fuels.*

It was submitted directly to the ISO Council, in accordance with clause 6.12.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 616-1967, which had been approved by the member bodies of the following countries :

Australia	India	Romania
Austria	Iran	Spain
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

France
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Coke — Determination of shatter indices

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method of determining the strength of coke by the shatter test.

2 PRINCIPLE

A representative sample of the coke above a certain specified size is dropped under standard conditions, the resistance to breakage being measured by the percentage of the coke which remains on sieves of different sizes after the test, or by a mathematical expression of these values.

3 APPARATUS

3.1 Shatter test apparatus (see figure 1), mounted on a concrete base and consisting of the following parts :

3.1.1 Box

The box is 710 mm long, 460 mm wide and 380 mm deep. It is supported by pulleys and wire ropes so that the inside of the bottom is exactly 1 830 mm above the base plate (3.1.2) when the coke is dropped.

The bottom of the box consists of two doors, hinged lengthwise and provided with a latch for rapid opening. The doors are of 6 mm steel plate and swing open rapidly so as not to impede the fall of the coke. A suitable form of latch, which prevents movement of the box on lifting the latch, is illustrated in figure 1.

The sides of the box are made of steel plate at least 3 mm thick. Guides, fastened to the end plates of the box, engage with the main vertical side supports of the apparatus which are fastened to the side plates surrounding the base plate.

3.1.2 Base plate

It is essential that the base plate be rigid; a steel plate not less than 13 mm thick, 1 220 mm long and 970 mm wide is suitable. Plates at least 200 mm high and 10 mm thick are fitted on all sides to prevent loss of coke during the test.

The back plate (see note) and side plates are rigidly fixed and the front plate is removable so as to facilitate shovelling the coke from the base plate into the box after each drop; for convenience, it may be hinged and fitted with latches.

NOTE — For the purpose of describing the apparatus, it is viewed from the "front" when the counterweight appears to the right (as depicted in figure 1).

Rigidity of the base plate is ensured by one of the following two methods, of which the first is the simpler :

a) The base plate is supported solidly on concrete, and the side and back plates and the vertical supports are welded to it.

b) The base plate is suspended above the ground, and is welded or riveted to a lower framework of 75 mm × 75 mm × 10 mm angles; the side and back plates are welded or riveted to this framework and also to a vertical piece of angle-iron at each of the two back corners.

3.1.3 Framework, comprising the following elements :

3.1.3.1 Vertical supports and box guides

The main vertical supports are fastened to the outside of the side plates of the base plate (3.1.2) and also to a top plate supporting the pulleys from which the box is suspended. The vertical supports are kept outside the base plate to facilitate shovelling the coke after each drop. If the plate is supported on a framework of angle-iron, the vertical supports should be riveted or welded to the angle-iron to increase rigidity. Guides, approximately 250 mm long, are fitted to the end plates of the box to engage with the main vertical supports.

Each vertical support may be built up in either of two ways, as follows. In one type, each vertical support consists of a T-section 150 mm wide with a 60 mm web, in which case the box guides are double to run on either side of the web of the T-section, the web of which is removed where it is fastened to the side plate of the base plate. Alternatively, the vertical support consists of two 75 mm × 75 mm angles set 13 mm apart so that a 6 mm guide plate from the box can move in the slot between the two angles.