SLOVENSKI STANDARD
SIST ISO 616:1998

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Koks - Ugotavljanje drobljivosti

Coke -- Determination of shatter indices

Coke -- Détermination des indices de chute

Ta slovenski standard je istoveten z: **ISO 616:1995**

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75.160.10 Trda goriva Solid fuels

SIST ISO 616:1998 **en**

INTERNATIONAL STANDARD

ISO 616

Second edition
1995-11-01

Coke — Determination of shatter indices

Coke — Détermination des indices de chute

Reference number
ISO 616:1995(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 616 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels*, Subcommittee SC 3, *Coke*.

This second edition cancels and replaces the first edition (ISO 616:1977), which has been technically revised.

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Introduction

The shatter index of coke can be determined for one test sieve or for each of a number of test sieves of different sizes of holes (e.g. 80 mm and 40 mm). The higher the shatter index, the greater the resistance of the coke to breakage into pieces which are smaller than the stated size.

The mean size of the coke before and after the shatter test may also be determined to give additional information about the strength of the coke.

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Coke — Determination of shatter indices

1 Scope

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

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

ISO 728:1995, *Coke (nominal top size greater than 20 mm) — Size analysis by sieving.*

ISO 2309:1980, *Coke — Sampling.*

ISO 3310-2:1990, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate.*

3 Definition

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

3.1 shatter index: Percentage of a specially prepared sample of coke remaining on a test sieve of stated size of openings after the sample has been subjected to a specified dropping test.

4 Principle

A test portion taken from the coke above a specified size is dropped under standard conditions. The mass of coke which is then retained on a test sieve, or on each of two or more test sieves of different sizes of holes, is determined.

5 Apparatus

5.1 Shatter test apparatus (see figure 1), mounted on a solid base and consisting of the following parts.

5.1.1 Base unit, comprising a steel base plate with further plates fitted on all sides to prevent loss of coke during the test. The base plate shall be not less than 12 mm thick, 1 220 mm long and 970 mm wide. Each of the other plates shall be not less than 200 mm high and 10 mm thick. The back plate (see note 1) and the side plates shall be rigidly fixed and the front plate shall be removable (see note 2), so as to facilitate shovelling the coke from the base unit into the box (5.1.4) after each drop.

NOTES

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

2 For convenience, the front plate may be hinged and fitted with latches.

Dimensions in millimetres

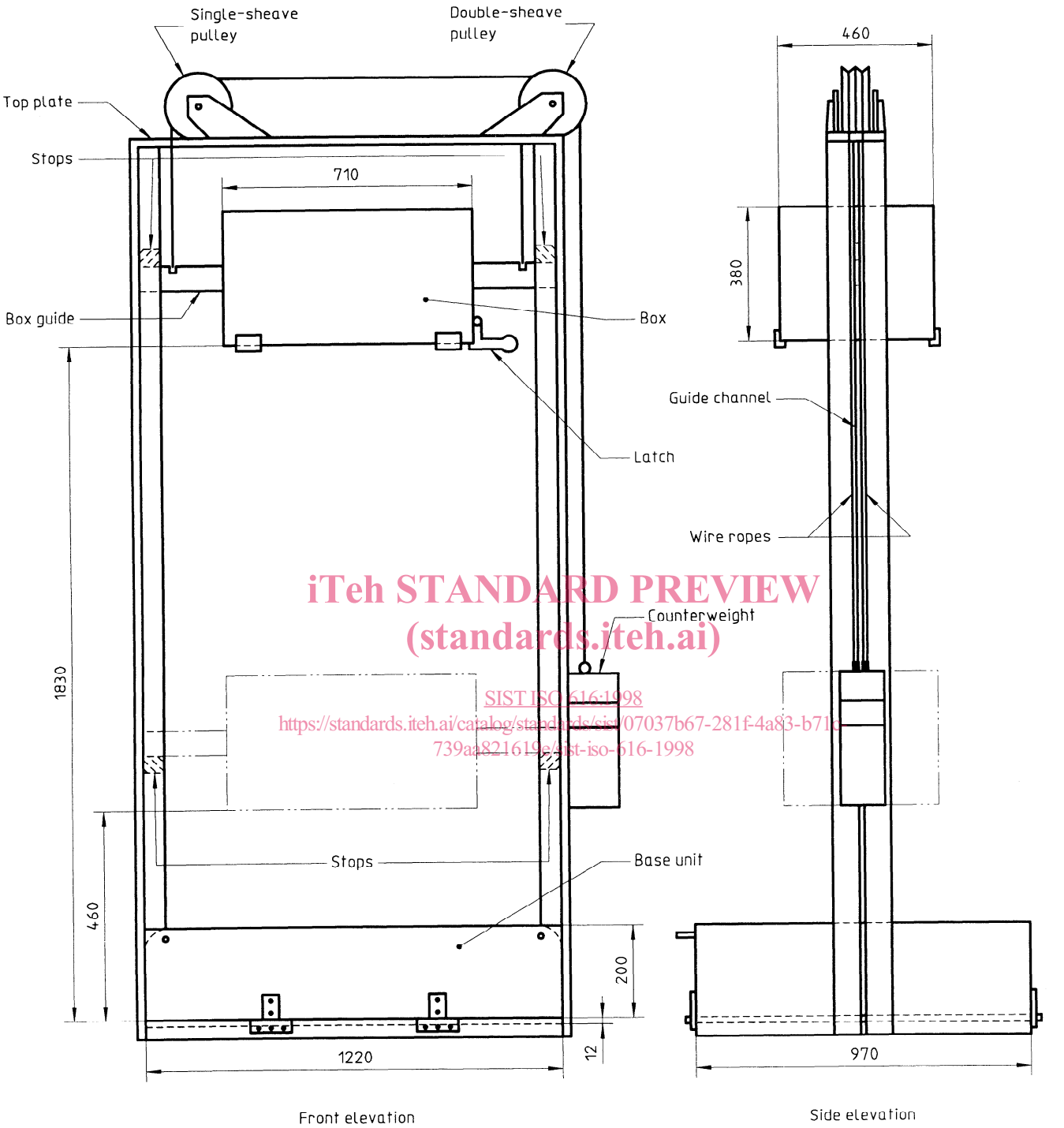

Figure 1 — Example of shatter test apparatus

The rigidity of the base plate shall be ensured by one of the following means, of which the first is the simpler.

a) The base plate is supported solidly on a concrete raft, and the side and back plates and the vertical supports (5.1.2) are welded to it.

b) The base plate is supported above a solid floor, on a lower framework of 75 mm × 75 mm × 10 mm angle-iron to which it is welded or riveted; 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.

5.1.2 Main vertical supports, fastened to the outside of the side plates of the base unit. If the base plate is supported on a framework of angle-iron, the vertical supports shall be riveted or welded to the angle-iron to increase rigidity. The two vertical supports shall be constructed in one of the following ways.

a) Each support consists of a T-section 150 mm wide with a 60 mm web.

   The web shall be removed where it is fastened to the side plate of the base unit.

b) Each support consists of two 75 mm × 75 mm angles set 13 mm apart.

5.1.3 Top plate, 150 mm to 200 mm wide and 6 mm thick, fastened to the main vertical supports, with a single-sheave pulley mounted at the left-hand end and a double-sheave pulley at the right-hand end.

5.1.4 Box, of internal dimensions 710 mm long, 460 mm wide and 380 mm deep.

The bottom of the box shall consist of two doors, hinged lengthwise and provided with a latch or other fastening capable of rapid opening. The doors shall be made of 6 mm steel plate and shall swing open rapidly, so as not to impede the fall of the coke. The fastening shall be designed so that it can be released without causing the box to move (see, for example, the arrangement shown in figure 1).

The sides of the box shall be made of steel plate not less than 3 mm thick.

5.1.5 Box guides, approximately 250 mm long, fitted to the end plates of the box, to engage with the main vertical supports.

If the main vertical supports consist of T-sections, each box guide shall be double to run on either side of the web of the T-section.

If the main vertical supports consist of 75 mm × 75 mm angles, each box guide shall consist of 6 mm plate which can move in the channel between the two angles.

5.1.6 Wire ropes and counterweight, for supporting the box. A wire rope shall be fastened to each box guide (5.1.5) near the side support, so as to interfere as little as possible with the reloading of the box after each drop. The two wire ropes shall pass over the pulleys and a counterweight shall be suspended from the other ends of the ropes. The counterweight shall consist of a fixed weight, of mass equal to that of the box, and two 12,5 kg removable weights which are slotted onto a rod which passes through the centre of the fixed weight.

5.1.7 Box stops, to restrain the box, on either side, at the top and bottom of its run. The upper stops shall be located so that the highest position to which the box can be raised is where the inside of the bottom of the box is 1 830 mm above the surface of the base plate. The lower stops shall be located to prevent the box from travelling below the position where the distance between the bottom of the box and the base plate is 460 mm.

If the main vertical supports consist of 75 mm × 75 mm angles, the stops shall consist of plates filling the slot between the two angles.

If the main vertical supports consist of T-sections, the lower stops shall consist of plates fixed to the web of the sections. The upper stops shall be provided by means of similar plates or, alternatively, the distance pieces fixing the width of the slots between the double guides shall be extended vertically to form stops against the top plate.

5.2 Test sieves, of perforated plate, square hole, complying with ISO 3310-2 and of nominal sizes of holes 125 mm, 100 mm, 80 mm, 63 mm, 50 mm, 40 mm, 25 mm and 12,5 mm. The sieve plates shall be 600 mm square and shall be mounted in hardwood frames armoured with angle plates to reduce wear. When the wear on any hole exceeds 2 % of its nominal size, the hole shall be blanked off or the test sieve changed.

NOTE 3 For the larger sizes of foundry coke, single-hole gauges may be used instead of test sieves.