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PEOPLE'S REPUBLIC OF CHINA

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**GB/T 2006-2008**

Replacing GB/T 2006-1994, partially replacing GB/T 1996-2003

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**Coke for Metallurgy -  
Determination of Mechanical Strength**

焦炭机械强度的测定方法

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## Foreword

The Method I of this Standard is not equivalent to ISO 556:1980 *Coke (Greater than 20mm in Size) – Determination of Mechanical Strength*; while Method II equivalently adopts ISO R 556:1967 *Coke – Determination of Drum Index*.

This Standard was integrated basing on the GB/T 2006-1994 *Coke for Metallurgy – Determination of Mechanical Strength*, and Appendix A *Coke for Metallurgy – Determination of Mechanical Strength of M40 and M10* in GB/T 1996-2003 *Coke for Metallurgy*.

This Standard replaced GB/T 2006-1994 *Coke for Metallurgy – Determination of Mechanical Strength*, and Appendix A in GB/T 1996-2003 *Coke for Metallurgy*.

Compared with GB/T 2006-1994, this Standard has the major changes as follows:

--- Add the Determination of Mechanical Strength M40 and M10.

This Standard was proposed by China Iron and Steel Industry Association.

This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Steel.

Drafting organizations of this Standard: Zhonggang Group Anshan Thermal Research Institute; and China Metallurgical Information and Standardization Institute.

Chief drafting staffs of this Standard: Wang Wei, Xue Zhonghou, Yu Yinping, Yang Jinxia, Wang Xiong, Guo Faqing, and Sun Wei.

This Standard was first-time published in 1980; and first-time revised in 1994.

# Coke for Metallurgy - Determination of Mechanical Strength

## 1 Scope

This Standard specifies the method principle, apparatus, sampling and sample preparation, test procedures, results calculation and precision etc. of the coke with particle size greater than 60mm and 25mm.

This Standard is applicable to the determination of mechanical strength of coke with particle size no less than 25mm. The coke with particle size less than 25mm can also refer to this Standard.

## 2 Normative References

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 1997 Coke – Sampling and Preparation of Samples

GB/T 2005 Coke for Metallurgy – Determination of Coke Breeze Content and Size Consist

## 3 Principle

The coke is constantly lifted by the lifting plate in the rotating drum and falls on the steel plate. During this period, due to the mechanical strength, the coke is impacted and rubbed, so that the coke becomes cracks along the seams and the surface is rubbed; and determine the anti-crushing strength and wear resistance of the coke.

## 4 Apparatus

4.1 Rotating drum (see Figure 1)

0.3kg; such test is ineffective; when the loss is less than 0.3kg, then the coke shall be counted into the Class-I coke with particle size less than 10mm.

**6.2 Method II (>60mm, enter into drum)**

**6.2.1** Use the round sieve with diameter of 60mm to manually screen the sample; and conduct the hand-punching (i.e. the matter-on-sieve shall pass through the sieve by hand; the part that pass through the sieve in one direction is called matter-under-sieve). When screening, the mass of coke entering into the sieve each time shall not exceed 15kg; strive to screen thoroughly; but also prevent the breaking of the coke due to colliding by strong force. Take 50kg (accurate to 0.1kg) of matter-on-sieve (coke larger than 60mm); place into a container that shall be entered into the drum; the rest are stand-by sample.

**6.2.2** Put one of the samples into the cleaned drum; tighten the drum cover; remove the drum shaker; start rotating for 100 cycles then stop; stand for 1min~2min; so that the powder falls off; open the drum cover; pour the coke from the drum; carefully clean the drum; collect the coke powder from the drum and cover.

**6.2.3** Screen the coke poured from the drum by the round sieves with diameters of 40mm and 10mm; for the coke with diameter greater than 40mm, it shall penetrate the hole by hand.

**6.2.4** When sieving, the amount of sieving each time shall not exceed 15kg; it is required not only to sieve thoroughly, but also prevent the breaking of the coke due to colliding by strong force.

**6.2.5** The mechanical sieves are permitted to use without significant difference comparing with the manual sieves. When there is a dispute, the manual sieve shall prevail.

**6.2.6** Separately weigh (accurate to 0.1kg) the mass of coke at different particle size of 40mm, 40mm~10mm, and less than 10mm; the difference between their mass sum and the mass of coke entering into the drum is the loss; when the loss is no less than 0.3kg; such test is ineffective; when the loss is less than 0.3kg, then the coke shall be counted into the Class-I coke with particle size less than 10mm.

## 7 Result Calculation

The anti-crushing strength  $M_{25}$  or  $M_{40}$  (%) is calculated by Formula (1):

$$M_{25} \text{ or } (M_{40}) = \frac{m_1}{m} \times 100 \dots\dots\dots(1)$$

Wearing resistance strength  $M_{10}$  (%) is calculated by Formula (2):

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