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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 1572-2018

Replacing GB/T 1572-2001

Determination of clinkering property of coal

煤的结渣性测定方法

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB/T 1572-2001, Determination of clinkering property of coal. Compared with GB/T 1572-2001, in addition to the editorial changes, the major technical changes are as follows: -- it adds "clinkering property" in the terms and definitions (see 3.1); -- it adds the periodic verification requirements for the constant-temperature zone of muffle furnace (see 6.3;

5.3 of 2001 edition); -- it adds the clause of "test report" (see Clause 11); -- it changes the log sheet of clinkering property determination (see Annex A; Annex A of 2001 edition). This Standard was proposed by China National Coal Association. This Standard shall be under the jurisdiction of National Technical Committee 42 on Coal of Standardization Administration of China (SAC/TC 42). The drafting organizations of this Standard. Test Centre of China Coal Research Institute. The main drafters of this Standard. Zhang Jinming, Chen Baohua, Zhang Bo, Yang Guang. The previous editions of the standard replaced by this Standard are as follows: -- GB/T 1572-1989, GB/T 1572-2001. Determination of clinkering property of coal

1 Scope

GB/T 1572-2018 is the Chinese national standard on determination of clinkering property of coal, in the field of mining and minerals. The /T suffix marks it as a recommended standard:

it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 6 February 2018 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 September 2018. Classification: ICS 73.040, CCS D21. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the method summary, reagents and materials, apparatus, sample preparation, determination procedures, result expression, method precision and test report for the determination of clinkering property of coal. This Standard applies to lignite, bitumite, anthracite and coke.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition dated applies to this document. For undated references, the latest edition of the referenced documents (including all amendments) applies to this document.

GB/T 474, Method for preparation of coal sample

GB/T 483, General rules for analytical and testing methods of coal

3 Terms and definitions

For the purposes of this document, the following terms and definitions and those defined in GB/T 483 apply.

3.1 clinkering property A measure of the property of clinkering because coal ash is heated to soften and melt during the process of gasification or combustion of coal. NOTE. Clinkering property is represented by clinkering ratio.

3.2 clinkering ratio Clin back wall or top wall of the furnace shall have exhaust vents and be equipped with a temperature controller. There shall be sufficient temperature-constant zone in the hearth, which is capable of maintaining the temperature at $(350 \pm 10)^{\circ}\text{C}$. The temperature-constant zone of the muffle furnace shall be tested with the furnace door closed, at least once each year. The pyrometers and thermocouples shall be calibrated once each year.

6.4 Industrial balance The maximum capacity is 1 kg; the minimum division value is 0.01 g.

6.5 Sieve shaker Reciprocating type; frequency (240 ± 20) min⁻¹; amplitude (40 ± 2) mm.

6.6 Circular screen Mesh size 3 mm and 6 mm; it is equipped with sieve cover and sieve bottom tray.

6.7 Shovel with hole The size is 100 mm x 100 mm; the side height is 20 mm; there are about 100 holes of diameter

2.5 mm on the bottom.

6.8 Tray It is made of a heat-resisting material of thickness

1.5 mm; the size is not less than 200 mm x 150 mm x 40 mm. There are pads 200 mm high at the four corners of the bottom of tray.

6.9 Sample barrel Volume 400 cm³.

6.10 Funnel It is made of a heat-resisting material. The diameter of the big opening is 120 mm; the diameter of the small opening is 45 mm; the height is about 120 mm.

6.11 U-gauge It is capable of measuring the pressure difference not less than 49 hPa.

7 Sample preparation

7.1 As specified in GB/T 474, prepare about 4 kg of air dried sample of particle size

8.6 After observing from the observation hole that the sample is burnt out; close the blast blower; record the reaction time.

8.7 After the gasification cylinder cools, take out all ash and weigh its mass, m_2 .

8.8 Overlay the 6 mm sieve and sieve bottom tray on the sieve shaker; then fully transfer the ash weighed to the 6 mm sieve; put on the sieve cover.

8.9 Start the sieve shaker; vibrate for 30 min; and weigh the mass of coke of particle size greater than 6 mm, m_1 .

8.10 Repeat determination on each sample twice under three blast strengths including

0.1 m/s,

0.2 m/s and

0.3 m/s (corresponding to the air flow rates 2 m³/h, 4 m³/h and 6 m³/h); refer to Annex A for the log sheet of determination. When carrying out determination under the blast strengths

0.2 m/s and

0.3 m/s, first maintain the blast strength at

0.1 m/s for 3 min and then adjust to the specified value.

9 Expression of results

9.1 Clinkering ratio is calculated in accordance with Formula (1); the result of determination is rounded off to the second decimal place. where, Clin - the clinkering ratio, expressed using mass fraction in %; m1 - the mass of coke of particle size greater than 6 mm, in g; m2 - the total mass of ash, in g.

9.2 Calculate the mean value of the results of two repeated determinations; round off the first decimal place as specified in GB/T 483; report it.