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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 1345-2005

The test sieving method for fineness of cement

(English Translation)

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Foreword

This Standard refers to ASTM C786-96 "Standard Test Method for Fineness of Hydraulic Cement and Raw Materials by the 300 μm (No. 50), 150 μm (No. 100), and 75 μm (No. 200) Sieves by Wet Methods", ISO/DIS/10749 "Methods of testing cement - Determination of fineness" and BS EN196-6.2000 "Methods of testing cement - Part 6.Determination of fineness".

This Standard replaces GB/T 1345-1991 "Test method for fineness of cement - The 80 μm sieve" from the date of its implementation.

Compared with GB/T 1345-1991, the changes are as follows.

- The standard name is changed to "The test sieving method for fineness of cement" (the standard name of 1991 edition; Clause 4 of this edition);
- ADD square-aperture sieves with an aperture size of 45 μm (see Clause 1 of this edition);
- ADD the terms and definitions (see Clause 4 of this edition);
- ADD the provisions for sample requirements (see Clause 6 of this edition);
- ADD the requirement that "in the qualification test, the average value of the parallel results of two samples is used as the sieving result of the sample

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instead of the determined value of one sample" (see subclause 8.3 of this edition);

- ADD the provisions for cleaning and calibration of test sieves (see Clause **7.5 and Annex A of this edition).**

Annex A of this Standard is a normative annex.

This Standard was proposed by China Building Materials Academy.

This Standard shall be under the jurisdiction of National Technical Committee on Cement of Standardization Administration of China.

Drafting organization of this Standard. China Building Materials Academy.

Participating drafting organizations of this Standard. Zhejiang Shaoxing Taoyan Xinxing Instrument Factory, Shaanxi Xi'an Cable & Copper Mesh Factory.

Main drafters of this Standard. Chen Ping, Zhang Datong, Yan Bilan, Xi Jinsong, Tao Baorong, Zhang Xiqiang.

The previous released versions replaced by this Standard are as follows.

- GB 1345-1962, GB 1345-1977, GB/T 1345-1991.

The test sieving method for fineness of cement

1 Scope

This Standard specifies the sieving method for fineness of cement by 45 μm square-aperture standard sieves and 80 μm square-aperture standard sieves.

This Standard applies to Portland cement, ordinary Portland cement, slag Portland cement, pozzolanic Portland cement, fly ash Portland cement, composite Portland cement, and other types of cement and powdery materials designated to use this Standard.

2 Normative references

The following documents contain the provisions which, through reference in this Standard, become the provisions of this Standard. For dated references, their subsequent amendments (excluding corrigendum) or revisions do not apply to

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this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 5329 Test sieves and test sieving - Vocabulary

GB/T 6003.1 Test sieves of metal wire cloth

3 Method principle

This Standard uses 45 μm square-aperture sieves and 80 μm square-aperture sieves to perform the sieving test on cement samples. The mass percentage of the sieve residue on the sieve is used to represent the fineness of the cement sample.

4 Terms and definitions

This Standard uses GB/T 5329 and the following terms and definitions.

4.1

vacuum sieving

Using a vacuum sieving analyzer to sieve the cement in the test sieve within a specified sieving time by the constant air flow generated by the negative pressure source.

5.2.1 A vacuum sieving analyzer consists of a sieve base, a vacuum sieve, a negative pressure source and a dust collector, where the sieve base consists of an air jet nozzle with a rotation speed of 30 r/min ± 2 r/min, a negative pressure meter, a control board, a micro motor and a shell, see Figure 3.

5.2.3 The distance between the upper opening plane of the air jet nozzle and the sieving medium is 2 mm ~ 8 mm.

5.2.4 The dimensions of the upper opening of the air jet nozzle is shown in Figure 4.

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5.2.5 Negative pressure source and dust collector, consisting of an industrial vacuum cleaner with a power of >= 600 W and a small cyclone dust collector or other equipment with equivalent functions.

6 Sample requirements

Cement samples shall be representative. The sample processing method is in accordance with Clause 3.5 of GB 12573-1990.

7.1 Test preparation

The test sieve used before the test shall be kept clean, and the vacuum sieve and manual sieve shall be kept dry. During the test, it weighs 25 g of sample for 80 μm sieve tests and weighs 10 g of sample for 45 μm sieve tests.

7.2.1 Before the sieving test, PLACE the vacuum sieve on the sieve base, COVER the sieve cover, CONNECT to the power supply, CHECK the control system, and ADJUST the negative pressure to the range of 4000 Pa to 6000 Pa.

7.3.1 Before the sieving test, CHECK that there is no mud or sand in the water, ADJUST the water pressure and position of the wet sieve holder so that it can operate normally, and CONTROL the distance between the bottom surface of the nozzle and the sieving medium to 35 mm ~ 75 mm.

7.4.1 WEIGH the cement sample to the nearest 0.01 g and POUR it into a manual sieve.

7.4.2 USE one hand to hold the sieve and shake back and forth, and gently tap with the other hand. The reciprocating shaking and tapping process shall be kept close to horizontal.

7.5 For other powdery materials or sieving tests using square-aperture sieves other than 45 μm to 80 μm, the relevant parameters such as the size of the sieve, the sample amount and the sieving time shall be specified.

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