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NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

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GB/T 12573-2008

Replacing GB/T 12573-1990

Sampling method for cement

水泥取样方法

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Issued on: June 30, 2008

Implemented on: April 01, 2009

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

Standardization Administration of the People's Republic of China.

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Foreword

This standard replaces GB 12573-1990 "Sampling method for cement".

As compared with GB 12573-1990, main changes of this standard are as follows:

- MODIFY the standard from mandatory standard into recommended standard;
- ADD the normative references (Chapter 2 of this version);
- DELETE the material requirements of the vessels used to store sample (3.6.1 of 1990 version; 9.1 of this version);
- MODIFY the Appendix A "Division sample physical and chemical properties test" of 1990 version into the Appendix B "28d compressive strength homogeneity test" of this version, and USE the cement 28d compressive strength homogeneity for indication;
- INCREASE the frequency of homogeneity test from cement 28d compressive strength variation factor greater than 6% to greater than 3.0% (A.2.4 of 1990 version; B.2.3 of this version).

Appendix A of this standard is informative, AND Appendix B is normative.

This standard was proposed by the China Building Materials Federation.

This standard shall be under the jurisdiction of the National Cement Standardization Technical Committee (SAC/TC 184).

The drafting organizations of this standard: Building Materials Industry Technical Supervision Research Center, China Building Materials Science Research Institute, Yunnan State-Owned Cement Honghe Co., Ltd.

The main drafters of this standard: Gan Xiangchen, Jin Fujin, Zhao Tingting, Chen Bin, Jiang Lizhen, Liu Chen, Wu Xu.

This standard was first released in December 1990, AND this is the first revision.

Sampling method for cement

1 Scope

This standard specifies the terms and definitions, sampling tools, sampling locations, sampling procedures, sampling amount and sample preparation and testing of exit-factory cement.

This standard applies to the sampling of the exit-factory cement.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) 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 175 Ordinary Portland cement

GB/T 4131 Nomenclature and terminology of cement

3 Terms and definitions

The terms and definitions as defined in GB 175 and GB/T 4131 AND the following terms and definitions apply to this standard.

3.1

Manual sampling

It refers to use of manual sampler to collect the cement sample.

3.2

Automatic sampling

It refers to use of automatic sampler to collect the cement sample.

3.3

From each lot number, randomly TAKE not less than 20 bags of cement; USE the bagged cement sampler to take sample; INSERT the sampler into the cement bag along the diagonal line direction; USE the thumb to press the air hole and carefully PULL out the sampling tube; PLACE the sample taken into the vessel which complies with the requirements of 9.1. AND the unit sample taken for each time shall be as consistent with each other as possible.

6.2 Automatic sampling

USE the automatic sampler to take sample. This device is generally installed as close to the cement packing machine as possible OR in the pipeline of the bulk vessel, to take sample from the cement flow, AND place the sample taken into the vessel which complies with the requirements of 9.1.

7 Sampling volume

7.1 The sampling volume of the composite sample shall comply with the relevant cement standards.

7.2 The sampling volume of the division sample shall comply with the following requirements:

- a) Bagged cement: TAKE at least 6 kg from one bag for every 1/10 number;
- b) Bulk cement: TAKE at least 6 kg within 5 minutes for every 1/10 number.

8 Sample preparation and testing

8.1 Composite sample

MAKE the unit sample of cement which is taken from each lot number pass the 0.9 mm square hole sieve; MIX it thoroughly; DIVIDE the sample to the fixed volume as required by the relevant standards in one time or several times; equally DIVIDE it into the laboratory sample and retained sample. The laboratory sample is tested in accordance with the requirements of the relevant standards. AND the retained sample is stored as specified in Chapter 9 for the purpose of arbitration. AND it is not allowed for the sample to be mixed with debris or caking.

8.2 Division sample

The 10 divisions taken from each lot number shall pass through a 0.9 mm square hole sieve, respectively, AND they shall not be mixed. It shall be

Appendix B

(Normative)

28d compressive strength homogeneity test

B.1 Test purpose

To assess the 28d compressive strength homogeneity of the cement of the same lot number.

B.2 Requirements

B.2.1 The division sample test is conducted once a quarter, AND it can choose any type and strength level.

B.2.2 After obtaining the division sample, it shall perform test immediately, AND all samples shall be tested within a week.

B.2.3 When the 28d compressive strength variation coefficient of the cement of the same lot number is more than 3.0%, it shall increase the test frequency to twice a quarter; AND if the variation coefficient is still more than 3.0%, it shall increase the test frequency to once a month.

B.2.4 INCREASE the test frequency until the 28d compressive strength variation coefficient of the cement of the same lot number is not more than 3.0%, before resuming the frequency to once a quarter.

B.2.5 When increasing the test frequency, it generally uses the cement of the same type and strength level.

B.3 Calculation of variation coefficient

B.3.1 The average value $\bar{X}$ of the division sample is calculated in accordance with the formula (B.1):

$$\bar{X} = \frac{1}{10} \sum_{i=1}^{10} X_i \quad \dots\dots\dots (B.1)$$

Where:

X_i - Division sample compressive strength value, in megapascals (MPa).

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