ICS 91.100.10
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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB/T 17671-1999
IDT ISO 679: 1989

Method of testing cements—Determination of strength

水泥胶砂强度检验方法（ISO 法）

Issue on February 08, 1999 Implemented on May 01, 1999

Issued by the State Bureau of Quality Technical Supervision

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Foreword

This Standard is formulated based on ISO 679: 1989 Methods of testing cements -- Determination of strength, main contents are equivalent to ISO 679, there are some changes according to domestic situation. The test results of compression strength are equivalent to ISO 679: 1989.

This Standard will use ISO standard sand to be homebred; the identification, quality verification and quality control will take ISO standard sand from Germany Standard Sand Company as standard material.

This Standard specifies the vibrostand with full wave-amplitude 0.75mm, frequency 1800-3000 times/min as substitute jolting apparatus which the operating procedure listed into Clause 7. Shall be subjected to this reference method when there is objection in test results of this Standard.

Compared with ISO 679: 1989, main changes of this Standard as follows:

1. Added “this standard is applicable to the inspection of rupture strength and compression strength of portland cement, common portland cement, portland slag cement, coal ash portland cement, composite portland cement, limestone portland cement. When other standard used for this standard shall research applicability specified in this standard”.
2. Added “the specimen with two ages, three ages in same mold trial shall contain within two ages when numbering” into “dispose and maintain before 8.1 demoulding”.
3. Added “10.2.1 rupture strength, take the mean value of rupture results of three prismoids as test result. When three strength value exceed 10%, shall be removed and take mean value as test results of rupture strength”.

This Standard is proposed by State Bureau of Building Materials Industry.

This Standard is under the jurisdiction of National Technical Committee 184 on Cements of Standardization Administration of China.

This Standard is drafted by China Building Materials Academy, Research Institute of Cement and New Building Materials.

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ISO 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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 679 was prepared by Technical Committee ISO/TC 74, Cement and lime.

Method of testing cements – Determination of strength

1 Scope

This Standard specifies instruments, materials, mortar constituents, test conditions, operation procedures and result calculation for the reference test method of cement mortar strength. The measured results of compressive strength is identical to the results of ISO 679.Alternative standard sand and compaction table is listed. Any disagreement in the results after alternation is subject to the reference method.

This Standard is applicable to the portland cement, ordinary portland cement, slag portland cement, portland fly-ash cement, compound portland cement, limestone portland cement, flexural strength and compressive strength inspection. When other cement adopts this standard, the applicability of this standard must be studied.

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 6003-1985 Test sieve

JC/T 681-1997 Mixer for mixing mortars

JC/T 682-1997 Jolting table for compacting mortars specimen

JC/T 683-1997 40mm x 40mm Jig for cement compressive strength test machine

JC/T 723-1982(1996) Apparatus for physical test of cement-mortar vibration compaction equipment

JC/T 724-1982(1996) Apparatus for physical test of cement-electrically driven flexure testing device

JC/T 726-1997 Mould for cement mortars

3 Principal Features of Method

The method comprises the determination of the compressive, and optionally the flexural, strength of prismatic test specimens 40 mm×40 mm×160 mm in size.

These specimens are cast from a batch of plastic mortar containing one part by mass of cement and three parts by mass of standard sand with a water/cement ratio of 0.5. Standard sands from various sources and countries may be used provided that they have been shown to give cement strength results which do not differ significantly from those obtained using the ISO Reference sand (see Chapter 11).

The mortar is prepared by mechanical mixing and is compacted in a mould using standard jolting apparatus, or the jolting apparatus with 0.75mm amplitude and 2800~3000 t/m frequency can be used (see Chapter 11).

The specimens in the mould are stored in a moist atmosphere for 24 h and then the demoulded

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