



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

GB/T 50082-2009

**Standard for test methods of long-term performance and
durability of ordinary concrete**

普通混凝土长期性能和耐久性能试验方法标准

(English Translation)

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1 General provisions

1.0.1

This standard is formulated in order to standardize and unify the long-term performance and durability test methods of concrete and improve the concrete test and detection level.

1.0.2

This standard is applicable to long-term performance and durability testing of ordinary concrete during engineering construction activities.

1.0.3

This standard specifies the basic technical requirements for long-term performance and durability testing of ordinary concrete. When this standard conflicts with the provisions of national laws and administrative regulations, the provisions of national laws and administrative regulations shall be implemented.

1.0.4 In addition to complying with the provisions of this standard, the long-term performance and durability tests of ordinary concrete shall also comply with the provisions of the current national standards.

2.0.1 Ordinary concrete

Cement concrete, which has a dry apparent density of (2000 ~ 2800) kg/m

2.0.2 Resistance grade to freezing-thawing of concrete

The freezing resistance class of concrete, which is divided by the maximum number of freeze-thaw cycles, as measured by the slow freezing method.

2.0.3 Resistance class to freezing-thawing of concrete

The freezing resistance class of concrete, which is divided by the maximum number of freeze-thaw cycles, as measured by the quick freezing method.

2.0.4 Test method for coulomb electric flux

A test method, that uses the electric flux passing through a concrete specimen to reflect the resistance of concrete to chloride ion penetration.

exceed the side length or 0.0005 of diameter of the specimen.

3.3.2 Except for the water penetration resistant specimen, the angle between adjacent

faces of all other specimens shall be 90°; the tolerance shall not exceed 0.5°.

3.3.3 Except for the dimensional tolerances of specially specified specimens, the
tolerance of each side length, diameter or height of all specimens shall not exceed 1 mm.

3.4 Preparation and curing of specimen

3.4.1

The preparation and curing of specimens shall comply with the provisions of the current national standard "Standard for test method of mechanical properties on ordinary concrete" GB/T 50081.

3.4.2 When preparing specimens for long-term performance and durability tests of

concrete, hydrophobic release agents shall not be used.

3.4.3 When preparing specimens for long-term performance and durability tests of

concrete, it should simultaneously prepare specimens for concrete cube compressive strength corresponding to the durability performance test age.

3.4.4 When preparing specimens for long-term performance and durability tests of

concrete, the vibration table and mixer used shall comply with the current industry standards "Vibrating table for concrete test" JG/T 245 and "Mixers for concrete test"

JG 244, respectively.

3.5 Test report

3.5.1

The content provided by the entrusting organization shall include the following items:

- 1 Name of the entrusting organization and witnessing organization.
- 2 Project name and construction location.
- 3 Name of the item required to be tested.
- 4 Other things to note.

3.5.2

The content provided by the specimen preparation organization shall include the following items:

- 1 Specimen number.
- 2 Date of specimen preparation.
- 3 Concrete strength grade.
- 4 Shape and size of specimen.
- 5 Types, specifications, origin of raw materials, as well as concrete mix proportions.
- 6 Curing conditions.
- 7 Test ages.
- 8 Other things to note.

3.5.3

The content provided by the testing or inspection organization shall include the following items:

- 1 Date the specimen is received.
- 2 The shape and size of the specimen.
- 3 Test number.
- 4 Test date.
- 5 Name, model, serial number of the instrument and equipment.
- 6 Test chamber temperature (humidity).
- 7 Curing conditions and test age.
- 8 Actual strength of concrete.
- 9 Test results.
- 10 Other things to note.

4 Test methods for resistance of concrete to freezing and thawing

4.1 Test method for slow freezing and thawing