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

GB 18588-2001

Replacing GB 18588-2001

**Test methods for emitted ammonia from the concrete
admixtures**

混凝土外加剂中释放氨的限量

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB 18588-2001 "Limits for Ammonia Release from Concrete Admixtures". Compared with GB 18588-2001, except for structural...

Aside from adjustments and editorial changes, the main technical changes are as follows.

- a) The mandatory clause "requirement" has been removed (see Chapter 4 of the 2001 edition);
- b) The sections "Test Methods" and "Inspection Rules" have been deleted (see Chapters 5 and 6 of the 2001 edition);
- c) Include "titration after distillation" in the main text (see Chapter 5, Appendix A of the 2001 edition);
- d) Precision requirements for the "post-distillation titration method" have been added (see 5.6);
- e) "Ion chromatography" has been added (see Chapter 6).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Building Materials Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Cement Products (SAC/TC197).

1 Scope

This document describes a test method for the release of ammonia from concrete admixtures.

This document applies to the determination of ammonia release from concrete admixtures using distillation titration and ion chromatography.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 601 Preparation of Standard Titration Solutions for Chemical Reagents GB/T 6682 Specifications and test methods for water used in analytical laboratories

3 Terms and Definitions

The following terms and definitions apply to this document.

concrete admixture

It is added before or during the mixing process of concrete to improve the properties of fresh and/or hardened concrete.

Materials whose dosage does not exceed 5% of the mass of cementitious materials.

Release ammonia emitted ammonia Ammonia released by additives in an alkaline environment.

4 Test conditions

The test environment was a temperature of $(23 \pm 2)^{\circ}\text{C}$ and a relative humidity of $(50 \pm 10)\%$.

5.1 Principle

Ammonia in concrete admixtures is removed by distillation. The distilled ammonia is collected using sulfuric acid solution as the absorbent and then analyzed by an indicator.

The color change indicates the titration endpoint, then the volume of standard solution consumed is read, and the analytical results are calculated.

5.2 Reagents and Materials

5.2.1

Water. Distilled water or water of equivalent purity shall comply with the provisions of GB/T 6682.