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

GB/T 47077-2026

**Test method for the available alkali content of mineral
admixtures**

矿物掺合料有效碱含量试验方法

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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. 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). This document was drafted by: China Academy of Building Research Co., Ltd., Suzhou Concrete and Cement Products Research Institute Co., Ltd., and China Railway Construction Corporation. Group Co., Ltd., China Water Resources and Hydropower Ninth Engineering Bureau Co., Ltd., Wuhan University of Technology, Southeast University, Yangtze River Science Research Institute of Yangtze River Water Resources Commission Institute, China Academy of Railway Sciences Group Co., Ltd., China Northwest Municipal Engineering Design & Research Institute Co., Ltd., Lanzhou University of Technology, Tongji University Southwest University of Science and Technology, Tsinghua University, Highway Research Institute of the Ministry of Transport, Wenzhou Xintiankun Environmental Protection Technology Co., Ltd., China Power Construction Corporation Group East China Survey and Design Institute Co., Ltd., China Building Materials Academy Co., Ltd., and CCCC Second Harbor Engineering Co., Ltd. Company, Jiangxi Huaheng Engineering Testing Co., Ltd., Handan Deyu Renewable Resources Utilization Co., Ltd., Guangdong Guangwu Concrete Products Co., Ltd. Hebei Century Inspection and Certification Co., Ltd., China Railway

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1 Scope

GB/T 47077-2026 is the Chinese national standard covering the alkali a slag or fly ash actually releases into concrete - the total alkali overstates it, and the available fraction is what feeds the alkali-silica reaction that cracks a structure decades after it was built. First edition, and it belongs with the slag activity method GB/T 12957-2026 published earlier in the year. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Building Materials Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the principle, test conditions, reagents and materials, instruments and equipment, sample preparation, and test procedures for the effective alkali content test of mineral admixtures. Test procedures, test data processing, and test reports. This document applies to the determination of the effective alkali content that can be dissolved in mineral admixtures in cement-based materials.

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 622-2006 Chemical Reagents - Hydrochloric Acid

GB/T 679-2002 Chemical Reagents - Ethanol (95%)

GB 1253 Working Standard Reagent Sodium Chloride

GB/T 1914 Chemical Analysis Filter Paper

GB/T 6003.1 Technical requirements and inspection of test sieves - Part

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 mineral admixture A powder with one or more oxides such as silicon, aluminum, and calcium as its main components, possessing a certain fineness, which can be added to concrete to adjust its properties. Coal ash, granulated blast furnace slag powder, silica fume, steel slag powder, granulated electric furnace phosphorus slag powder, copper slag powder, and natural pozzolanic materials.

3.2 The total amount of potassium and sodium ions in the liquid phase in a cement-based cementitious material system in a free state.

Note. Values are expressed as calculated based on $\text{Na}_2\text{O} = 0.658\text{K}_2\text{O}$.