

ICS 77.140.99

CCS H 54



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

GB/T 28293-2012

Ground iron and steel slag

钢铁渣粉

Issued on: May 11, 2012

Implemented on: February 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative reference documents
- 3 Terms and definitions

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed by China Iron and Steel Industry Association. This standard is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183). This standard is responsible for drafting units. China Metallurgical Building Research Institute Co., Ltd., China Building Materials Science Research Institute. This standard participates in the drafting unit. China Beijing Metallurgical Engineering Technology Co., Ltd., Anshan Iron and Steel Group slag development company, Jiujiang China Metallurgical Environmental Resources Co., Ltd., Zhejiang Hai Mu Steel Service Co., Ltd., Xinyu Metallurgical Environmental Protection Resources Development Co., Ltd., Baosteel Development Co., Ltd. Shanghai New Type materials branch, China Jiangxi International Economic and Technical Cooperation Company, Zhejiang Xiaoshan Jianhong Commodity Concrete Co., Ltd., Guangdong Shaoguang Jia Sheep New Materials Co., Ltd., Wuhan Iron and Steel (Group) Company Metallurgical Slag Branch, Beijing Dongfang Jianyu Concrete Technology Research Institute Co., Ltd., Jiahua Building Materials Co., Ltd., Tangshan Tanglong New Building Materials Co., Ltd., Jinan Lu new new building materials Co., Ltd., Jiangsu Huilong new building materials limited Company, Zhangjiagang Hengchang New Building Materials Co., Ltd., Shaoxing Hongchi Machinery Manufacturing Co., Ltd., Maanshan Iron and Steel Co., Ltd. The main drafters of this standard. Zhu Guilin, Zhang Liangliang, Hao to party, Lu Zhongfei, Sun Shushan, Su Xingwen, Jiang Lizhen, Lu Wen, Xia Chun, Wang Anling, Xu Guoxiong, Gu Wenfei, Li Zonggen, Xu Lansheng, Li Hui, Li Xiaoyang, Tang Youjing. Steel slag powder

1 Scope

China's national product standard for ground iron and steel slag. It specifies the classification, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of the slag powder used as a supplementary cementitious material in cement and concrete. Steelmaking produces slag in enormous quantity, and the two kinds it produces behave very differently. Blastfurnace slag from ironmaking, quenched and ground, is latently hydraulic and is a well-established cement replacement with its own standard. Steel slag - from the converter or the electric furnace - is a harder problem: it is

more variable, less reactive, and it contains free lime and free magnesia that hydrate slowly and expand, which is exactly the behaviour a concrete cannot tolerate. Left untreated it is a road aggregate at best and a liability at worst. This standard covers the ground material that combines the two, and it exists because that combination is what makes the steel slag usable: blended with ground granulated blastfurnace slag and ground together, the reactive component supplies the hydraulic activity and the mixture is brought within limits that a concrete can accept. So the requirements are built around the two things that decide whether the powder is safe and useful: the activity index, which is the strength a mortar reaches with the powder replacing part of the cement, measured at fixed ages against a control; and the soundness, which is the test that catches the delayed expansion the free lime and magnesia would otherwise cause. Around them sit the fineness, the density, the moisture, the loss on ignition, the sulphur trioxide, the chloride and the alkali content. Issued on 11 May 2012 and in force since 1 February 2013.

This standard specifies the definition, composition and materials of steel slag powder, technical requirements, test methods, inspection rules, packaging, marking, transportation and Storage. This standard is applicable to steel slag powder for concrete admixture and cement admixture. Steel slag powder for other building materials and products can be With reference to this standard.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB 166 General Portland cement Methods for chemical analysis of cement GB/T

GB/T 203 Granulated blast furnace slag for use in cement

GB/T 208 Determination of cement density

GB/T 750 Test method for steam pressure stability of cement

GB/T 1346 cement standard consistency water consumption, setting time, stability test method

GB/T 2419 Determination of fluidity of cement mortar GB/T 5483 Natural gypsum

GB 6566 Radiation nuclide limits for building materials

GB/T 8074 Determination of specific surface area of cement Representation and Judgment of Numerical Correction Rule and Limit Value of GB/T 8170 GB 9774 cement bags

GB/T 12573 Cement Sampling Method

GB/T 17671 Cement mortar strength test method (ISO method)

GB/T 21371 Industrial gypsum for industrial use in cement JC/T 667 cement grinding process admixture YB/T 022 Steel slag for use in cement YB/T 804 Steel slag and treatment terminology

3 Terms and definitions

YB/T 804 Definitions and the following terms and definitions apply to this document.

3.1 To steel slag and granulated blast furnace slag as the main raw material, can be mixed with a small amount of gypsum powder into a certain fineness of the powder material (if necessary, can be added to help Grinding agent).