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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 15231-2023

Replacing GB/T 15231-2008

Test methods for the properties of glassfibre reinforced cement

玻璃纤维增强水泥性能试验方法

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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: This document replaces GB/T 15231-2008 "Test Methods for Performance of Glass Fiber Reinforced Cement" and is consistent with GB/T 15231-2008 In addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) The anchor pullout force, embedded bolt sleeve pullout force, shrinkage rate, accelerated aging test piece size and quantity were added to the test piece preparation (see Section 1): Table 1 and Table 2 of Chapter 4);

b) Added standard test conditions (see Chapter 5);

c) Added the anchor pullout force test method (see Chapter 11);

d) Added the test method for embedded bolt sleeve pullout force (see Chapter 12);

e) Added normative reference document JG/T 243 (see 13:1:5);

f) The automatic freezing and thawing test method has been added to the freezing

resistance test method (see 13:1:5 and 13:2:4);

g) Added shrinkage test method (see Chapter 14);

h) Added accelerated aging test method (see Chapter 15): Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents: This document is proposed by China Building Materials Federation: This document is under the jurisdiction of the National Cement Products Standardization Technical Committee (SAC/TC197): This document was drafted by: China National Institute of Building Materials Research Co:, Ltd:, Guochang Testing Holding Group Beijing Co:, Ltd:, Hunan Tianjin Ze Building Materials Co:, Ltd:, Shanghai Zhuoou Construction (Group) Co:, Ltd:, China Communications Road and Bridge Construction Co:, Ltd:, Zhejiang Yicheng Testing Co:, Ltd:, Henan Anluo Expressway Co:, Ltd:, Xi'an University of Architecture and Technology, Dounan (Henan) Engineering Inspection Technology Co:, Ltd:, Beijing Lihao Jiayuan Building Materials Co:, Ltd: Co:, Ltd:, Guangzhou Jieda Building Decoration Engineering Co:, Ltd:, Shaanxi Mei Innovation Materials Technology Co:, Ltd:, Anhui Huiliao New Decoration Materials Co:, Ltd: Co:, Ltd:, Guangzhou University, China Construction Science and Industry Group Co:, Ltd:, China MCC

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4 Bureau (Beijing) Highway Testing Technology Co:, Ltd:, Hubei Zheng Pingshui Conservancy and Hydropower Engineering Quality Inspection Co:, Ltd:, Sichuan Luhang Construction Engineering Co:, Ltd:, and CCCC Guangzhou Water Transport Engineering Design and Research Institute have Co:, Ltd:, CNPC (Xinjiang) Petroleum Engineering Co:, Ltd:, China Railway 16th Bureau Group Co:, Ltd:, China Railway Construction Group North China Engineering Co:, Ltd:, Beijing Beijing Municipal Construction Group Co:, Ltd:, Shandong Yongfu Construction Group Co:, Ltd:, China Railway 10th Bureau Group Co:, Ltd:, Yunnan Yunshui Engineering Technology TECHNOLOGY TESTS LIMITED: The main drafters of this document: Li Qinghai, Cui Qi, Zhao Jiaojiao, Huang Zhengguo, Liu Hui, Lu Guannan, Jin Hao, Lu Weiqian, Tian Limin, Zhang Chaosong, Guo Qiusheng, Gao Qingwen, Wei Tingfeng, Fu Huijie, Qian Yuandi, Fang Yinsheng, Cheng Congmi, He Juan, He Hong, Yu Jialiang, Ma Chao, Zhu Jihong, Liu Nian, Chen Chunfeng, Xu Tingxian, Yang Weixi, Zhu Jie, Hong Yuan, Lin Angyang, Ye Dejian, Zhao Haibo, Che Yanfei, Li Wei, Guo Xiao, Zhang Hao, Shi Feiyun, Liu Jianzhao, Lei Yao, Li Zexu, Qian Zengzhi, Cao Yajun, Wei Wuju, Dong Biao, Zhang Lie, Tan Lei, Zhang Jiade, Zhao Bin, Hu Leting, Wang Bin, Yin Shengguang, Sun Xiaoming, Zhang Ming, Wang Lei, Zhang Shengli, Hou Rongyan, Ma Minglei, Bai Jie, Xiong Hao, Zhu Zhenxiang, Li Xinxing, Bai Zibin, Weng Zhenhua, Han Liangjun, Cao Yunzhu, Zhu Yongshun, Ding Junjian, Ni Wenquan, Fang Peng, Wu Guangjun, Li Shihua, Li Yuyao, Sun Hongliang, Fang Hong, Tang Deyun, Bu Fanmin, Zhang Weijun, He Runzhi, He Lijuan, Zhang Jianning, Huang Shunshen, Zhang Chengjie, Wang Jing, Yan Yongping, Zhang Guoping, Jiang Yu, Qiao Sen, Hu Chaolong, Zhang Yufei, Zhou Ke, Xian Zhenghong, Zhuang Quezhen, Lu Xinyan, Du Jiang, Zhang Lijun, Zhou Shengnan, Gao Jianwei, Li Qingyuan, Wu Yujiao, Zhang Xin: This document was first published in:1994, revised for the first time in:2008, and this is the second revision: Test methods for properties of glass fiber reinforced cement

1 Scope

GB/T 15231-2023 is the Chinese national standard on test methods for the properties of glassfibre reinforced cement, in the field of construction materials and building. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is

how most foreign buyers meet it. It was issued on 27 November 2023 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 June 2024. Classification: ICS 91.100.40, CCS Q14. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document describes the bulk density, moisture content, water absorption, compressive strength, and bending properties (bending ratio limit) of glass fiber reinforced cement: strength, bending ultimate strength and bending elastic modulus), tensile strength, impact strength, anchor pullout force, embedded bolt sleeve pullout force, frost resistance Test methods for resistance, shrinkage, accelerated aging and glass fiber content: This document applies to performance testing of glass fiber reinforced cement:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document: JG/T 243 Concrete frost resistance test equipment

3 Terms and definitions

The following terms and definitions apply to this document: 3:

1 It is made of cement as the main cementing material, sand as fine aggregate, alkali-resistant glass fiber as the main reinforcing material, and supplemented by additives and other components: Fiber-reinforced cement-based material: 3:

2 Test board testboard Use the test flat plate made with the same mix ratio, the same molding process, and curing under the same conditions as the product: 3:

3 Test piece sample A sample cut from a product or test board and used to test a certain performance: 3:4 glass fiber content glassfibrecontent The mass fraction of glass fiber in glass fiber reinforced cement: 3:5 anchor anchor Used to connect glass fiber reinforced cement panels and attached steel frames, with a certain degree of rotational freedom of 90° in the direction perpendicular to the panels: Curved steel bars: 3:6 bonding pad bonding pad An additional pile of fiberglass-reinforced cement material placed on top of a structural layer of fiberglass-reinforced cement to secure anchors:

Note: Generally used on glass fiber reinforced cement components with steel frames attached to the back: