

ICS 29.030

CCS K 14



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

GB/T 46478-2025

Magnetizing method of permanent magnet

永磁体磁化方法

Issued on: December 2, 2025

Implemented on: July 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

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 Electrical Equipment Industry Association. This document is under the jurisdiction of the National Technical Committee on Standardization of Electrical Alloys (SAC/TC228). This document was drafted by: Hangzhou Quadrant Technology Co., Ltd., Ningbo Xinglong Magnetic Technology Co., Ltd., and Guilin Electrical Science Research Institute Co., Ltd. The company, China National Institute of Metrology, Fujian Jinlong Rare Earth Co., Ltd., Baotou Inspection and Testing Center, Hunan Transportation Vocational College Institute, Ganzhou Qifei New Materials Co., Ltd., China Jiliang University, Xi'an Siqiang Technology Co., Ltd., Zhejiang Xinsheng Permanent Magnet Technology Co., Ltd. The company, McGregor (Electronics) Shenzhen Co., Ltd., Ningbo Zhaobao Magnetics Co., Ltd., Baotou Rare Earth Research Institute, and Ningbo Tongchuang Magnetics Co., Ltd. Limited Liability Company, Baotou Inste Rare Magnetic New Materials Co., Ltd., Ningbo Songke Magnetic Materials Co., Ltd., Xi'an University of Electronic Science and Technology, China Electric Power Force Science Research Institute Co., Ltd., Xi'an Jiaotong University, Jiangxi Yueci Rare Earth New Materials Technology Co., Ltd., Zhuzhou Hongda Magnetolectric Technology Co., Ltd. Company, Hangzhou Kede Magnetics Co., Ltd., China Southern Power Grid Co., Ltd. Ultra-High Voltage Transmission Company, Hunan Provincial Institute of Metrology and Testing, Ningbo Maitech Magnetic Materials Technology Co., Ltd., Suzhou Jiaqishi Technology Co., Ltd., Ningbo Shuchuang Magnetic Industry Co., Ltd., Shanxi Jinshan Magnetic Materials Co., Ltd. The company, Ningbo Yuanchen New Materials Co., Ltd., Guangzhou Xinlaifu Magnetic Materials Co., Ltd., Hunan Aerospace Magnetolectric Co., Ltd., and Jinhua Jiuhe Magnetolectric. Technology Co., Ltd., Ningbo Jinlun Magnetic Materials Technology Co., Ltd., Dongyang Fushite Magnetic Industry Co., Ltd., Shanxi Ruike New Materials Co., Ltd. The company, Taizhou Zhongdong Technology Co., Ltd., Yantai Zhenghai Magnetic Materials Co., Ltd., Shandong Zhongci Technology Development Co., Ltd., and Sichuan Kyoto Longtai Technology Co., Ltd., Inner Mongolia

Suchuang Magnetic Materials Co., Ltd., Ningbo Jinji Strong Magnet Co., Ltd., Ningbo Meiguli Magnet & Electric Co., Ltd. company. The main drafters of this document are. Zhao Yi, Huang Jianglun, Cui Defeng, He Jian, Zhang Jiulei, Li Yongtao, Liu Zhiting, Liu Pujie, Wu Qiong, and Zou Guangrong. Bao Jinsheng, Shu Kemao, Lin Jianqiang, Wang Yu, Fan Fengchun, Dong Gaihua, Zhu Qing, Yu Chuang, Ding Yi, Cao Jianan, Zhou Qing, Yao Linjie, Wang Zhanguo, Cheng Yanyuan Xu Yu, Huang Hao, Tao Zhizhuan, Cui Long, Zhang Baohua, Zhang Shiwei, Wu Longzhang, Tan Chunlin, Chen Chang, Peng Weibao, Zhang Fangyuan, Qin Dongmin, Ruan Yuxiang Xue Meng, Zhang Shuqing, Tang Mingxing, Kang Zhendong, Xu Feng, Zheng Mengjun, Huang Keke, Huang Jian, Wang Ruinan, Hu Xiukun, Wei Xing, Jia Xiaowu, Zhong Wancai, Hong Senliang Huang Liangzhu. permanent magnet magnetization method

1 Scope

GB/T 46478-2025 is the Chinese national standard covering magnetising a permanent magnet - the field strength needed to saturate each material, the pulse and the coil that deliver it, the multipole patterns used in motors, and the verification that the magnet came out fully magnetised rather than nearly so. First edition, and it belongs with the permanent magnet material standards in the 29.030 group. It was issued on 2 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the China Electrical Equipment Industry Association. This page is published from the official record of the 2025 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 outlines the magnetization principle of permanent magnets, specifies the requirements for magnetization devices, samples, and magnetization procedures, and describes different types of magnetization. The effectiveness testing method specifies the requirements for the product magnetization report. This document applies to the technology of processing permanent magnets from permanent magnet materials such as rare earth iron boron, rare earth cobalt, AlNiCo, Samarium iron nitrogen, and permanent magnet ferrite. magnetization.

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 2900.60-2002 Electrical Engineering Terminology. Electromagnetism

GB/T 2900.83-2008 Electrical Engineering Terminology. Electrical and Magnetic Devices

GB/T 3217-2013 Magnetic Test Methods for Permanent Magnet (Hard Magnetic) Materials

GB/T 9637-2001 Electrical Engineering Terminology. Magnetic Materials and Components

GB/T 38437-2019 Method for measuring the magnetic dipole moment of ferromagnetic material samples by pull-out or rotation

GB/T 43264-2023 Test Method for Magnetic Field Distribution on the Surface of Permanent Magnets

GB/T 43266-2023 Method for measuring magnetic declination of permanent magnets

3 Terms and Definitions

The definitions in GB/T 2900.60-2002, GB/T 2900.83-2008, GB/T 9637-2001, and GB/T 3217-2013, and the following... The terms and definitions listed apply to this document.

3.1 A magnetization method that produces a single pair of magnetic poles on the same magnet.

3.2 A magnetization method that produces two or more pairs of magnetic poles on the same magnet.

3.3 The equipment parameters set when magnetizing the sample.

4. Principle of Magnetization Magnetic materials are macroscopically magnetized by internal magnetic domain rotation and domain wall displacement under the action of an external magnetic field, as shown in Figure 1.