

ICS 73.120
CCS D 94



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

GB/T 45687-2025

**Test method for vertical stirred mill selection in ultrafine
grinding**

立式搅拌磨选型试验方法

Issued on: May 30, 2025

Implemented on: December 1, 2025

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

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting is required. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Mining Machinery (SAC/TC 88). This document was drafted by: Luoyang Mining Machinery Engineering Design and Research Institute Co., Ltd., CITIC Heavy Industries Machinery Co., Ltd., Zibo Dali Mining Machinery Co., Ltd., Shenyang Jianzhu University, Liaoning Wuhuan Special Materials and Intelligent Equipment Industry Technology Research Institute Co., Ltd., Tianjin University. The main drafters of this document are: Yang Jichang, Tong Lijuan, Wang Yadong, Pan Weining, Qi Wenduo, Zou Defang, Zhang Qiang, Cui Shaohua, Wang Yazhen, Song Xianzhou, Chen Songzhan, Wang Keyi, Long Yanze, Wei Bo.

Test Method for Selection of Vertical Stirred Mill

1 Scope

China's national test method for selecting vertical stirred mills for ultrafine grinding. Below about forty microns a tumbling mill becomes hopelessly inefficient, because the energy of a falling ball is far more than a fine particle needs and most of it is wasted as heat and noise. A stirred mill instead agitates a bed of small media with a screw or a set of discs, so grinding happens by attrition between media at low energy per event - which is the right

mechanism at that size and can cut the energy for a fine grind by half or more. Where such a mill sits in a circuit, and what it will actually achieve on a given feed, has to be established by testing on the material itself. The standard specifies the test conditions, the principles of the method, the equipment and instruments, the test content and procedure, the data processing and the report, for applications in mining, metallurgy, building materials and chemicals.

This document specifies the test conditions, method principles, test equipment and instruments, test content and procedures, test Test data processing and test report. This document is applicable to the selection of vertical stirred mills (hereinafter referred to as stirred mills) for ultrafine powder grinding in the fields of mining, metallurgy, building materials, chemical industry, etc. test.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 6005 Basic dimensions of mesh openings for test sieves - wire mesh, perforated plate and electroformed sheet
DZ/T 0118 Technical Specifications for Laboratory Standard Sieve Oscillators

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Experimental stirred mill power consumption The energy consumed in the stirred mill grinding test to obtain a product of a certain particle size per unit weight.

Note. The unit is kilowatt-hour per ton (kW·h/t).

3.2 Levin mill power consumption W L The Levin grinding test is the energy consumed to obtain a certain particle size per unit weight of product.

Note. The unit is kilowatt-hour per ton (kW·h/t).

3.3 the size of the mill feed F

80 The hole size of the square hole sieve when the passing rate of the feed ore sample is 80%.

Note. The unit is micrometer (μm).

3.4 the size of the mill product P

80 The square hole screen size when the grinding product pass rate is 80%.

Note. The unit is micrometer (μm).

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