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

GB/T 11106-2022

Replacing GB/T 11106-1989

**Metallic powder - Determination of green strength by
compression of cylinder compacts**

金属粉末 用圆柱形压坯的压缩测定压坯强度的方法

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 Principles
- 5 Instruments and equipment

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 of Standardization Documents" drafted. This document replaces GB/T 11106-1989 "Methods for Determination of Compact Strength by Compression of Cylindrical Compacts for Metal Powders", and Compared with GB/T 11106-1989, in addition to structural adjustment and editorial changes, the main technical changes are as follows:

- a) terms and definitions are added (see Chapter 3);
 - b) Added testing machine requirements (see 5.1);
 - c) Changed the requirements for molds, presses, balances, dimension measuring instruments, and adjustable ball seat pads (see 5.2~5.6, 4.1~ of the 1989 edition 4.5);
 - d) Added test rate control requirements (see 7.2);
 - e) the rupture load value is accurate to 10N (see 7.3, 5.6 of the 1989 edition);
 - f) Change " σ_{max} " to " R_d ", " N/mm^2 " to " MPa ", and " A_0 " to " S_0 " (see Chapter 8, 1989 edition of 6.1);
 - g) Amend the numerical rounding rule to "round off to 1MPa according to the provisions of GB/T 8170" (see Chapter 8, 6.2 of the 1989 edition);
 - h) Changed the content of the test report (see Chapter 9, Chapter 7 of the 1989 edition).
- Please note that some content of this document refers to patents. The issuing agency of this document assumes no responsibility for identifying patents. This document is proposed by China Nonferrous Metals Industry Association. This document is under the jurisdiction of

the National Nonferrous Metals Standardization Technical Committee (SAC/TC243). This document is drafted by: General Iron and Steel Research Institute, Antai Tianlong Tungsten and Molybdenum Technology Co., Ltd., Northwest Nonferrous Metals Research Institute, Shenzhen Injection Technology Co., Ltd. Technology Co., Ltd., Beijing Youyan Powder New Materials Research Institute Co., Ltd., Central South University, Xi'an Sailong Metal Materials Co., Ltd., Guangzhou Eastern Academy of Sciences Industrial Analysis and Testing Center, Shenzhen Wantest Testing Equipment Co., Ltd. The main drafters of this document. Dong Shasha, Luo Zhiqiang, Wang Changjun, Li Jikang, Liang Jianxiong, Huang Xin, Li Ming, Tan Ping, Li Zengfeng, Zhang Yue, Zhou Yonggui, Hu Qiang, Wang Rui, Wang Shouren, Zhu Jilei, Xiang Changshu, Xiao Yongtong, Wu Chaoqun, Huang Xing, Zhong Xin. This document was first published in 1989 and this is the first revision. Compression of cylindrical compacts for metal powders Method for determining green strength

1 Scope

GB/T 11106-2022 is the Chinese national standard on metallic powder - determination of green strength by compression of cylinder compacts, in the field of metallurgy. 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 9 March 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 October 2022. Classification: ICS 77.160, CCS H16. 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 specifies a method for determining the strength of metal powder compacts by compression of cylindrical compacts. This document applies to the determination of the formability of metal powders.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 1481 Determination of compressibility of metal powder (excluding cemented carbide powder) in uniaxial pressing

GB/T 8170 Numerical Rounding Rules and Representation and Judgment of Limit Values

GB/T 16825.1 Inspection of static uniaxial testing machines Part

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

4 Principles

Metal powders or powders mixed with added elements (including lubricants) are pressed into cylindrical specimens under specified conditions. put the sample Place it in the center of the adjustable backing plate, start the testing machine to make the sample bear the axial load continuously and evenly to rupture, record the rupture load, calculate Compressive strength.

5 Instruments and equipment

5.1 Testing machine The testing machine of any system used for compression testing shall have an accuracy of Class 1 or better and shall be checked in accordance with GB/T 16825.1. test. The testing machine shall not be unstable within its compressive load range. The test machine table should be free from tilting and sideways movement.

5.2 Mold The die material is cemented carbide or tool steel. The die punch is a cylindrical die punch, the extruded diameter is 20mm~26mm, and the height-diameter ratio is 0.8~1.0 green compact, the schematic diagram of the mold is shown in Figure 1.