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

GB/T 10422-2025

Replacing GB/T 10422-2002

**Sintered metal friction materials - Determination of transverse
rupture strength**

烧结金属摩擦材料 横向断裂强度的测定

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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.

This document replaces GB/T 10422-2002 "Sintered metal friction materials - Determination of transverse rupture strength" and is compatible with GB/T 10422- Compared with 2002, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The content of "Scope" in this document has been changed (see Chapter 1, Chapter 1 of the 2002 edition);
- b) Added a section on terms and definitions (see Chapter 3);
- c) "Test Principles" was changed and made into an independent chapter (see Chapter 4, 2.1 of the 2002 edition);
- d) "Device" was changed and made into an independent chapter, the title was changed to "Instruments and Equipment", and the requirements for measuring instruments were added (see Chapter 5, 2.2 of the 2002 edition);

- e) Added the dimension "L = 25.0 mm ± 0.2 mm" in the device drawings (see Figure 1, Figure 1 of the 2002 edition);
- f) The sample was changed into a separate chapter, the title was changed to "Sample", and the sample requirements were changed (see Chapter 6, 2002 Edition). 2.3);
- g) Added the conditions in which samples are not allowed to be tested (see 6.4);
- h) The "Test Procedures" section was changed and made into a separate chapter, and the contents of the procedures were modified (see Chapter 7, 2.4 of the 2002 edition);
- i) Changed "-100 mesh spherical powder" to replace "spherical powder" (see 7.3, 2.4.3 of the 2002 edition);
- j) "Test Results" was changed and made into a separate chapter, and numerical rounding was added (see Chapter 8, 2.5 of the 2002 edition);
- k) The units of "sample width" and "sample thickness" in the calculation formula for transverse rupture strength have been changed (see 8.1, 2.5 of the 2002 edition);
- l) Added the "Uncertainty" chapter (see Chapter 9);
- m) The content of the test report has been added (see Chapter 10, Chapter 3 of the 2022 edition).

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 is proposed and coordinated by the China Machinery Industry Federation.

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The previous versions of this document and the documents it replaces are as follows.

--First published as GB/T 10422-1989 in 1989 and first revised in 2002;

--This is the second revision.

Determination of transverse rupture strength of sintered metal friction materials

1 Scope

This document describes the method for the determination of the transverse rupture strength of sintered metallic friction materials.

This document applies to the determination of the fracture strength of rectangular specimens of sintered metallic friction materials under transverse uniform loading under

controlled conditions.

2 Normative references

GB/T 8170

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 transverse rupture strength

R_{tr} Place a sample of a certain shape and size flat on two supports at a specified distance, and apply a static load concentrated at the midpoint of the support until the sample The stress per unit area of the sample cross section at fracture. Note. The unit is MPa.

4 Test Principle

The test method in this document adopts the principle of strength determination of simply supported beams loaded with three-point bending.

- a) The support and loading of the test device on the sample conform to the setting of a simply supported beam with concentrated load at the center point.
- b) The test device loads the sample at the midpoint of the support by slowly and steadily flowing powder into the container until the sample breaks.

The process can be used to determine whether the sample can withstand static load.

5.1 Test apparatus

The test device for transverse rupture strength is shown in Figure 1.