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

GB/T 46586-2025

**Fine ceramics - Measurement of viscosity of ceramic slurry -
Rotational viscometer method**

精细陶瓷 陶瓷浆料黏度的测定 旋转黏度计法

(English Translation)

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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 is modified to adopt ISO 19613:2018 "Fine ceramics (advanced ceramics, advanced technical ceramics) - Measurement of ceramic slurry using rotational viscometer".

Viscosity of the material.

The technical differences between this document and ISO 19613:2018, and the reasons therefor, are as follows.

---The scope of application of this document has been expanded to clarify that it applies to both Newtonian and non-Newtonian fluids (see Chapter 1);

---ISO 20507 has been replaced with the normatively referenced GB/T 17991 (see Chapter 3, 5.2.1), conforming to the Chinese requirements for fine ceramics terminology.

The requirements are to adapt to my country's technological conditions and facilitate the implementation of this document;

---ISO/IEC 17025 has been replaced with the normatively referenced GB/T 27025 (see Chapter 11), improving the operability of test report writing.

It is adaptable to my country's technological conditions.

The following editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Determination of Viscosity of Fine Ceramic Slurry - Rotational Viscometer Method";

---The sources for terms 3.1, 3.2, and 3.6 have been added to facilitate the execution of this document;

---Note 3.4 has been deleted;

---Note 4.1 has been deleted;

---JIS 8803 (see 5.2.1) has been replaced with GB/T 10247 (reference standard), and viscosity testing according to applicable Chinese technical conditions has been adopted.

Systematic and fine ceramic terminology, to facilitate the implementation of this document;

---ISO 2555 (see 5.3.2) has been replaced with GB/T 40280 (reference standard), conforming to my country's classification requirements for single-cylinder viscometers.

The requirements are to adapt to my country's technological conditions and facilitate the implementation of this document;

---Note 7.2 has been deleted.

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 Building Materials Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Industrial Ceramics (SAC/TC194).

1 Scope

This document describes a method for determining the viscosity of ceramic slurries using a rotational viscometer.

This document applies to both Newtonian and non-Newtonian fluids.

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 17991 Terminology for Fine Ceramics (GB/T 17991-2009, ISO 20507:2003, MOD)
GB/T 27025 General requirements for the competence of testing and calibration laboratories (GB/T 27025-2019, ISO/IEC 17025:2017) IDT)

3 Terms and Definitions

The terms and definitions defined in GB/T 17991 and the following terms and definitions apply to this document.

Shear stress

Shear force is the force acting on a unit area when a fluid is subjected to shear force.

Note: SI unit is Pa (scal).

[Source. GB/T 45765-2025, 3.1] 3.2 shear rate the percentage change in laminar velocity perpendicular to the fluid flow direction when a fluid is subjected to shear force.

Note: SI unit is per second (s-1).

[Source. GB/T 45765-2025, 3.2] 3.3 Viscosity the ratio of shear stress to shear rate.

Note 1: Viscosity represents the internal resistance to fluid flow.

Note 2: The SI unit for viscosity is Pascal-second (Pa·s).

Note 3: In the centimeter-gram-second (cm·g·s) unit system, 1 millipascal-second = 1 centipoise [1 poise = 1 gram/(cm·second)].

Note 4: Viscosity is sometimes referred to as "dynamic viscosity" or "shear viscosity." Because the shear rate gradient is not uniform across all parts of the shaft, the measured viscosity...

It is commonly referred to as "apparent viscosity".

Newtonian fluid

A fluid in which the shear stress at any point is directly proportional to the shear rate.