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

GB/T 45765-2025

**Fine ceramics - Measurement of thixotropic behaviour of
ceramic slurry - Rotational viscometer method**

精细陶瓷 陶瓷浆料触变性试验方法 旋转黏度计法

(English Translation)

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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.

This document is modified to adopt ISO 20379:2018 "Fine ceramics (advanced ceramics, advanced technical ceramics) - Testing of ceramics using a rotational viscometer" Thixotropy of Porcelain Slurry.

Compared with ISO 20379:2018, this document has many structural adjustments. The table below shows the structural number changes between the two documents. See Appendix A. This document has many technical differences compared to ISO 20379:2018.

A list of these technical differences and their causes is given in Appendix B. The following editorial changes have been made to this document.

- To coordinate with the existing standard, the name of the standard is changed to "Test method for thixotropy of fine ceramic slurry - Rotational viscometer method";
- Deleted Note 1 of 3.5 and 3.8 in ISO 20379:2018;
- Added Figure 1 "Diagram of equipment structure";
- Added Appendix A (informative) "Comparison of this document with ISO 20379:2018 structure numbers";
- Added Appendix B (informative) "Technical differences between this document and ISO 20379:2018 and their causes";
- Added Appendix C (informative) "Schematic diagram of the test instrument rotor";
- Added Appendix D (informative) "Schematic diagram of shear stress and shear rate".

1 Scope

This document describes a method for testing the thixotropy of ceramic slurries with non-Newtonian behavior using a rotational viscometer.

This document is applicable to the testing of ceramic slurries with non-Newtonian properties using coaxial cylinder, cone and plate, and parallel plate viscometers (see Appendix C). Thixotropy of the material.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Shear stress

The force per unit area when a fluid is subjected to shear.

Note: See Appendix D for a schematic diagram.

3.2 Shear rate

The change ratio of the laminar flow velocity perpendicular to the direction of fluid flow when the fluid is subjected to shear force.

Note: See Appendix D for a schematic diagram.

3.3 Newtonian property

The property of a slurry that shear stress is proportional to the shear rate.

3.4 Non-Newtonian property

The property of a slurry in which shear stress is not proportional to shear rate.

3.5 Viscosity

The ratio of shear stress to shear rate.

3.6 Flow curve

The relationship curve between shear rate and shear stress.

3.7 Thixotropic behavior

It has time-dependent flow characteristics. When shear force is applied, the viscosity decreases with time until it reaches a constant value. When the shear force is interrupted, the viscosity decreases with time until it reaches a constant value. The viscosity should recover within a certain period of time.