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

GB/T 47904-2026

**Continuous-fibre-reinforced ceramic composites - Test method
for in-plane shear strength at ambient temperature - V-notched
beam test**

连续纤维增强陶瓷基复合材料 室温面内剪切强度试验方法 V形切口梁法

(English Translation)

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Reference

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 20506:2005 "Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of ceramics quality by the Yossipescu method".

In-plane shear strength at room temperature of continuous fiber reinforced ceramic matrix composites.

Compared with ISO 20506:2005, this document has undergone many structural adjustments. A comparison of the changes in structural numbering between the two documents is provided below.

See Appendix A for the table of contents.

This document differs significantly from ISO 20506:2005. The relevant clauses are indicated in vertical margins.

The following editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Test of In-Plane Shear Strength at Room Temperature for Continuous Fiber Reinforced Ceramic Matrix Composites".

Method. V-shaped notch beam method;

---Notes 1 and 2 in Chapter 1 have been deleted;

---Note in 3.2 has been deleted;

---The footnote for Figure 6 has been deleted;

---Appendix A (informative) "Comparison of Structure Numbers in this Document with ISO 20506:2005" has been added;

---Appendix B (Informative) has been added. "Technical Differences Between This Document and ISO 20506:2005 and Their Reasons";

---The footnotes in Appendix C have been removed;

---The references have been changed.

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 test method for determining the room-temperature in-plane shear strength of continuous fiber-reinforced ceramic matrix composites using the V-beam notch method.

This document specifies the terminology and definitions, symbols, principles, influencing factors, test equipment, and sample requirements for the room temperature in-plane shear strength test.

Product, safety precautions, test conditions, test procedures, result calculation, and test report.

This document applies to the measurement of in-plane shear strength at room temperature of unidirectional, bidirectional, and multidirectional continuous fiber reinforced ceramic or glass matrix composites.

This method is not applicable to composite materials that are discontinuously fiber-reinforced, whisker-reinforced, or particle-reinforced.

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 16825.1 Inspection and calibration of static uniaxial testing machines for metallic

materials - Part 1: Tensile and/or compressive testing machines Inspection and calibration of force measurement systems (GB/T 16825.1-2022, ISO 7500-1:2018, IDT) GB/T 21389 Vernier, dial indicator and digital calipers

3 Terms and Definitions

The following terms and definitions apply to this document.

The force that a sample experiences in a shear test, parallel to the shear cross section.

maximum shear force

The maximum shear force that the sample withstands during a shear test.

in-plane shear strength τ_{uP} the ratio of the maximum in-plane shear force to the initial shear cross-sectional area.

4 Symbols

Table 1 lists the symbols and items used in this document.