
**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Mechanical properties of ceramic
composites at elevated temperature
in air atmospheric pressure —
Determination of in-plane shear
strength**

*Céramiques techniques (céramiques avancées, céramiques techniques
avancées) — Propriétés mécaniques des composites céramiques
à température élevée sous air à pression atmosphérique —
Détermination de la résistance au cisaillement dans le plan*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at elevated temperature in air atmospheric pressure — Determination of in-plane shear strength

1 Scope

This document specifies a method for the determination of in-plane shear strength of continuous fibre-reinforced ceramic composites at elevated temperature in air or inert atmosphere by the asymmetric four-point bending test on double-edge notched specimens. The shear strength in plane (1,2) can be evaluated, where direction 1 is that of the greater fraction of reinforcement and direction 2 is perpendicular to direction 1. Methods for test piece fabrication, testing modes and rates (load or displacement rate), data collection and reporting procedures are addressed.

This document applies to all ceramic matrix composites with continuous fibre-reinforcement: unidirectional (1D), bidirectional (2D) and tridirectional (xD, with $2 < x \leq 3$).

This document is for material development, material comparison, quality assurance, characterization, reliability and design data generation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3611, *Geometrical product specifications (GPS) — Dimensional measuring equipment: Micrometers for external measurements — Design and metrological characteristics*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 19634, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Ceramic composites — Notations and symbols*

ISO 20507, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Vocabulary*

IEC 60584-1, *Thermocouples — Part 1: Reference tables*

IEC 60584-2, *Thermocouples — Part 2: Tolerances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19634 and ISO 20507 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>