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Fine ceramics (advanced ceramics, advanced technical ceramics) — Ceramic composites — Determination of the degree of misalignment in uniaxial mechanical tests

Céramiques techniques — Céramiques composites — Détermination du degré de non-alignement lors des essais mécaniques uniaxiaux

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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.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 206, *Fine ceramics*.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Ceramic composites — Determination of the degree of misalignment in uniaxial mechanical tests

1 Scope

This International Standard describes a procedure

— to verify the degree of misalignment of the load train of the test machines using a reference test specimen uniformly loaded in tension or in compression, and

— to give indications in order to correct defects such as torsion and bending.

This International Standard is not intended to provide a quantitative and acceptable limit before the testing of ceramic matrix composites with a fibre reinforcement: unidirectional (1D), bidirectional (2D), and tridirectional (xD, with $2 < x \leq 3$) loaded along one principal axis of reinforcement. This limit depends on the sensitivity of each type of composite to the misalignment defect.

NOTE 1 This limit is to be defined between the testing establishment and the customer.

NOTE 2 Monolithic ceramics are very sensitive to misalignment defects while CMCs (ceramic matrix composite) in general are moderately sensitive to them.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

CEN/TR 13233:2007, *Advanced technical ceramics — Notations and symbols* (to be replaced by future ISO NP 19634)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TR 13233:2007 (to be replaced by future ISO NP 19634) and the following apply.

3.1 General

3.1.1
calibrated length
l
part of the reference test specimen which has a uniform and minimum cross-section area

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