

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for compressive behaviour of continuous fibre-reinforced composites at room temperature (ISO 20504:2006)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
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EUROPEAN STANDARD

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Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for compressive behaviour of continuous fibre-reinforced composites at room temperature (ISO 20504:2006)

Céramiques techniques - Méthode d'essai de résistance à la compression des composites renforcés de fibres continues à température ambiante (ISO 20504:2006)

Hochleistungskeramik - Bestimmung der Eigenschaften unter Druck von endlosfaserverstärkten Verbundwerkstoffen bei Raumtemperatur (ISO 20504:2006)

This European Standard was approved by CEN on 25 March 2016.

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European foreword

The text of ISO 20504:2006 has been prepared by Technical Committee ISO/TC 206 “Fine ceramics” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 20504:2016 by Technical Committee CEN/TC 184 “Advanced technical ceramics” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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Endorsement notice

The text of ISO 20504:2006 has been approved by CEN as EN ISO 20504:2016 without any modification.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for compressive behaviour of continuous fibre-reinforced composites at room temperature

1 Scope

This International Standard describes procedures for determination of the compressive behaviour of ceramic matrix composite materials with continuous fibre reinforcement at room temperature. This method applies to all ceramic matrix composites with a continuous fibre reinforcement, uni-directional (1D), bi-directional (2D) and tri-directional (x D, with $2 < x \leq 3$), tested along one principal axis of reinforcement. This method may also be applied to carbon-fibre-reinforced carbon matrix composites (also known as: carbon/carbon or C/C). Two cases of testing are distinguished: compression between platens and compression using grips.

2 Normative references

The following referenced documents are indispensable for the application 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 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 3611, *Micrometer callipers for external measurements*

ISO 9513, *Metallic materials — Calibration of extensometers used in uniaxial testing*

ISO 14126, *Fibre-reinforced plastic composites — Determination of compressive properties in the in-plane direction*

ASTM E1012, *Standard Practice for Verification of Test Frame and Specimen Alignment Under Tensile and Compressive Axial Force Application*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

gauge section

part of the test specimen which has uniform and minimum cross-sectional area

3.2

gauge section length

l

length of the gauge section