Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at high temperature - Determination of tensile properties (ISO 14574:2013)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14574:2016 sisaldab Euroopa standardi EN ISO 14574:2016 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14574:2016 consists of the English text of the European standard EN ISO 14574:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.04.2016.	Date of Availability of the European standard is 20.04.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at high temperature - Determination of tensile properties (ISO 14574:2013)

Céramiques techniques - Propriétés mécaniques des céramiques composites à haute température - Détermination des caractéristiques en traction (ISO 14574:2013)

Hochleistungskeramik - Mechanische Eigenschaften von keramischen Verbundwerkstoffen bei hoher Temperatur - Bestimmung der Eigenschaften unter Zug (ISO 14574:2013)

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

The text of ISO 14574:2013 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 14574:2016 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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1892:2005, EN 1893:2005.

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Endorsement notice

The text of ISO 14574:2013 has been approved by CEN as EN ISO 14574:2016 without any modification.

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1 Scope

This International Standard specifies the conditions for determination of tensile properties of ceramic matrix composite materials with continuous fibre reinforcement for temperatures up to 2 000 °C.

NOTE 1 In most cases, ceramic matrix composites to be used at high temperature in air are coated with an antioxidation coating.

NOTE 2 The purpose of this International Standard is to determine the tensile properties of a material when it is placed under an oxidizing environment but not to measure material oxidation.

This International Standard applies to all ceramic matrix composites with a continuous fibre reinforcement, unidirectional (1D), bi-directional (2D), and tri-directional (xD, with $2 < x \leq 3$), loaded along one principal axis of reinforcement.

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

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

IEC 60584-1:1995, *Thermocouples — Part 1: Reference tables*

IEC 60584-2:1982+ Amendment 1:1989, *Thermocouples — Part 2: Tolerances*

3 Terms, definitions and symbols

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

3.1
test temperature
T
temperature of the test piece at the centre of the gauge length

3.2
calibrated length
l
part of the test specimen that has uniform and minimum cross-section area

3.3
gauge length
L_o
initial distance between reference points on the test specimen in the calibrated length