

STN	Jemná keramika (špeciálna keramika, špeciálna technická keramika) Tepelnofyzikálne vlastnosti keramických kompozitov Stanovenie teplotnej rozťažnosti (ISO 17139: 2014)	STN EN ISO 17139 72 7518
------------	--	--

Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of thermal expansion (ISO 17139:2014)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/22

Obsahuje: EN ISO 17139:2022, ISO 17139:2014

Oznámením tejto normy sa ruší
STN EN 1159-1 (72 7518) z decembra 2003

135020

EUROPEAN STANDARD

EN ISO 17139

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2022

ICS 81.060.30

Supersedes EN 1159-1:2003

English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of thermal expansion (ISO 17139:2014)

Céramiques techniques - Propriétés thermophysiques des composites céramiques - Détermination de la dilatation thermique (ISO 17139:2014)

Hochleistungskeramik - Thermophysikalische Eigenschaften keramischer Verbundwerkstoffe - Bestimmung der Wärmeausdehnung (ISO 17139:2014)

This European Standard was approved by CEN on 27 March 2022.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 17139:2022 (E)

Contents	Page
European foreword.....	3

European foreword

The text of ISO 17139:2014 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 17139:2022 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 2022, and conflicting national standards shall be withdrawn at the latest by October 2022.

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

This document supersedes EN 1159-1:2003.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 17139:2014 has been approved by CEN as EN ISO 17139:2022 without any modification.

INTERNATIONAL STANDARD

ISO 17139

First edition
2014-06-15

Fine ceramics (advanced ceramics, advanced technical ceramics) — Thermophysical properties of ceramic composites — Determination of thermal expansion

*Céramiques techniques — Propriétés thermophysiques des composites
céramiques — Détermination de la dilatation thermique*



Reference number
ISO 17139:2014(E)

© ISO 2014

ISO 17139:2014(E)**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
4.1 General.....	2
4.2 Direct measurement.....	2
4.3 Differential method.....	2
5 Apparatus	2
5.1 Construction materials.....	2
5.2 Heating and cooling device.....	2
5.3 Temperature measurement.....	2
5.4 Test piece mounting.....	2
5.5 System for measuring and recording the thermal expansion.....	3
5.6 Test piece measurement.....	3
6 Specimens	3
6.1 Test pieces.....	3
6.2 Reference pieces.....	3
6.3 Dimensions.....	3
7 Procedure	4
8 Calculations	5
8.1 Direct measurement.....	5
8.2 Differential method.....	5
9 Test report	6
Annex A (normative) Direct measurement apparatus	9
Annex B (normative) Differential type measurement apparatus	11
Bibliography	12

ISO 17139:2014(E)

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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*.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Thermophysical properties of ceramic composites — Determination of thermal expansion

1 Scope

This International Standard describes methods for the determination of linear thermal expansion characteristics of ceramic matrix composite materials up to 2 300 K, and is applicable to 1D, 2D, and nD materials.

The method describes general principles of construction, calibration, and operation of the equipment.

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

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN