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Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of unidimensional thermal diffusivity by flash method (ISO 19629:2018)

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

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English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of unidimensional thermal diffusivity by flash method (ISO 19629:2018)

Céramiques techniques - Propriétés thermophysiques des composites céramiques - Détermination de la diffusivité thermique unidimensionnelle par la méthode flash (ISO 19629:2018)

Hochleistungskeramik - Thermophysikalische Eigenschaften keramischer Verbundwerkstoffe - Bestimmung der Temperaturleitfähigkeit (ISO 19629:2018)

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EN ISO 19629:2022 (E)

Contents	Page
European foreword.....	3

European foreword

The text of ISO 19629:2018 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 19629:2022 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Thermophysical properties of ceramic composites — Determination of unidimensional thermal diffusivity by flash method

*Céramiques techniques — Propriétés thermophysiques des
composites céramiques — Détermination de la diffusivité thermique
unidimensionnelle par la méthode flash*



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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Apparatus	2
5.1 Heat pulse source.....	2
5.2 Test chamber.....	2
5.3 Detectors.....	2
5.3.1 Measurement of absolute temperature.....	2
5.3.2 Transient detectors.....	3
5.4 Data acquisition.....	3
6 Test specimens	4
7 Test specimen preparation	4
7.1 Machining and preparation.....	4
7.2 Number of test specimens.....	4
8 Procedure	4
8.1 Calibration of apparatus.....	4
8.2 Procedure.....	4
9 Results	5
9.1 Determination of the thermal diffusivity.....	5
9.2 Sources of uncertainties.....	5
10 Test report	5
Annex A (informative) Unidimensional thermal model	9
Annex B (informative) Experimental characteristics for optimal measurements	11
Bibliography	12

ISO 19629:2018(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).

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Thermophysical properties of ceramic composites — Determination of unidimensional thermal diffusivity by flash method

1 Scope

This document describes the flash method for the determination of thermal diffusivity of ceramic matrix composites with continuous fibre reinforcement.

In order to conform with the unidimensional heat transfer hypothesis, the experimental conditions are defined such that the material behaves in a homogeneous manner. This involves performing tests in one symmetry axis of the composite.

The method is applicable to materials which are physically and chemically stable during the measurement, and covers the range of temperature from 100 K to 2 800 K. It is suitable for the measurement of thermal diffusivity values in the range $10^{-4} \text{ m}^2\cdot\text{s}^{-1}$ to $10^{-7} \text{ m}^2\cdot\text{s}^{-1}$.

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

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

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