
Fina keramika (sodobna keramika, sodobna tehnična keramika) - Termofizikalne lastnosti keramičnih kompozitov - Ugotavljanje enodimenzionalne toplotne difuzivnosti z bliskovno metodo (ISO/DIS 19629:2026)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of unidimensional thermal diffusivity by flash method (ISO/DIS 19629:2026)

Hochleistungskeramik - Thermophysikalische Eigenschaften keramischer Verbundwerkstoffe - Bestimmung der eindimensionalen Temperaturleitfähigkeit mittels Flashverfahren (ISO/DIS 19629:2026)

Céramiques techniques - Propriétés thermophysiques des composites céramiques - Détermination de la diffusivité thermique unidimensionnelle par la méthode flash (ISO/DIS 19629:2026)

Ta slovenski standard je istoveten z: prEN ISO 19629

ICS:

81.060.30 Sodobna keramika Advanced ceramics

oSIST prEN ISO 19629:2026 **en,fr,de**

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ISO/DIS 19629

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*

ICS: 81.060.30

This document is circulated as received from the committee secretariat.

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/DIS 19629:2026(en)

ISO/TC 206

Secretariat: JISC

Voting begins on:
2026-06-24

Voting terminates on:
2026-09-16

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Published in Switzerland

ISO/DIS 19629:2026(en)

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ISO/DIS 19629:2026(en)

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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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This second edition cancels and replaces the first edition (ISO 19269:2018), which has been technically revised.

The main changes are as follows:

- change of the scope to extend the maximum temperature of use of the flash method to 3300 K;
- addition of terms and definitions in [clause 3](#);
- specifications added concerning the components of apparatus ([clause 5](#)) and the test specimens ([clauses 6 and 7](#));
- introduction of important steps in [clause 8](#) about procedures of calibration and verification of the apparatus, as well as measurement procedure;
- improvement of the data analysis and the identification of the uncertainty sources in [clause 9](#);
- addition of [annexes B and C](#) describing corrections for non-ideal initial and boundary conditions;
- addition of [annex D](#) related to precision;
- updated list of references in the Bibliography.

This document was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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

1 Scope

This document specifies the use of 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 3 300 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 — Design and metrological characteristics of micrometers for external measurements*

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20507 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 thermal diffusivity

a

ratio of the thermal conductivity to the product of the bulk density and the specific heat capacity

Note 1 to entry: It is expressed in square metres per second ($\text{m}^2\cdot\text{s}^{-1}$).