

STN	Jemná keramika (špeciálna keramika, špeciálna technická keramika) Stanovenie teplotnej vodivosti monolitckej keramiky metódou záblesku (ISO 18755: 2022)	STN EN ISO 18755 72 7512
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Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of thermal diffusivity of monolithic ceramics by flash method (ISO 18755:2022)

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. 12/23

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EUROPEAN STANDARD

EN ISO 18755

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EUROPÄISCHE NORM

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English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of thermal diffusivity of monolithic ceramics by flash method (ISO 18755:2022)

Céramiques techniques - Détermination de la diffusivité thermique des céramiques monolithiques par la méthode flash (ISO 18755:2022)

Hochleistungskeramik - Bestimmung der Temperaturleitfähigkeit monolithischer Keramik mit dem Laserflash-Verfahren (ISO 18755:2022)

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EN ISO 18755:2023 (E)

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European foreword

The text of ISO 18755:2022 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 18755:2023 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

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This document supersedes EN 821-2:1997.

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Endorsement notice

The text of ISO 18755:2022 has been approved by CEN as EN ISO 18755:2023 without any modification.

INTERNATIONAL STANDARD

ISO 18755

Second edition
2022-12

Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of thermal diffusivity of monolithic ceramics by flash method

*Céramiques techniques — Détermination de la diffusivité thermique
des céramiques monolithiques par la méthode flash*



Reference number
ISO 18755:2022(E)

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ISO 18755:2022(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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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 document was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

This second edition cancels and replaces the first edition (ISO 18755:2005), which has been technically revised.

The main changes are as follows:

- a change of title and scope to enable the use of flash lamps to generate the energy pulse;
- the addition of three new informative annexes: one dealing with the determination of the intrinsic thermal diffusivity; the second with the determination of specific heat and thermal conductivity of the samples tested; and the third providing precision data for the method on the basis of an inter-laboratory study carried out by seven European laboratories in 2020-2021 in the framework of the project Hi-TRACE;
- an additional normative reference to provide clear instructions on the determination of the density of the materials to be analysed;
- relevant specifications added concerning the size and the density of the specimen;
- improvement of [Annex F](#), with an updated list of potential reference material and incorporation of a validation method.

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) — Determination of thermal diffusivity of monolithic ceramics by flash method

1 Scope

This document specifies the test method for the determination of thermal diffusivity from room temperature to at least 1 700 K by the flash method for homogeneous monolithic ceramics with porosity less than 10 %.

Flash methods, like laser flash, are applicable to homogeneous isotropic materials with thermal diffusivity values ranging from 0,1 to 1 000 mm² s⁻¹ within the temperature range from approximately 100 K to 2 300 K.

The method described in [Annex G](#) describes how to estimate, on the basis of the thermal diffusivity test, the specific heat capacity and the thermal conductivity of homogeneous monolithic ceramics with porosity less than 10 %.

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 18754, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of density and apparent porosity*

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