

Fine ceramics (advanced ceramics, advanced technical ceramics) - Ceramic composites - Notations and symbols (ISO 19634:2017)

## EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN ISO 19634:2021 sisaldab Euroopa standardi EN ISO 19634:2021 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 19634:2021 consists of the English text of the European standard EN ISO 19634:2021.
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ICS 81.060.30

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English Version

Fine ceramics (advanced ceramics, advanced technical  
ceramics) - Ceramic composites - Notations and symbols  
(ISO 19634:2017)

Céramiques techniques - Céramiques composites -  
Notations et symboles (ISO 19634:2017)

Hochleistungskeramik - Keramische  
Verbundwerkstoffe - Benennungen und Formelzeichen  
(ISO 19634:2017)

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

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## European foreword

The text of ISO 19634:2017 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 19634:2021 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of an identical text or by endorsement, at the latest by January 2022, and conflicting national standards shall be withdrawn at the latest by January 2022.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 CEN/TR 13233:2007.

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.

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## Endorsement notice

The text of ISO 19634:2017 has been approved by CEN as EN ISO 19634:2021 without any modification.

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## 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](http://www.iso.org/directives)).

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For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

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

# Fine ceramics (advanced ceramics, advanced technical ceramics) — Ceramic composites — Notations and symbols

## 1 Scope

This document defines the symbols to be used to represent physical, mechanical and thermal characteristics, as determined by methods described in relevant ISO publications, for ceramic matrix composites. It is aimed at avoiding confusion in reporting measurements and characteristics of products.

Where possible, the definitions are in accordance with the relevant parts of ISO 80000. In addition, the symbols used in undertaking measurements of these characteristics are also defined.

## 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 80000-4, *Quantities and units — Part 4: Mechanics*

ISO 80000-5, *Quantities and units — Part 5: Thermodynamics*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 80000-4 and ISO 80000-5 and the following apply.

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

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

### 3.1

#### **ceramic matrix composite**

ceramic, carbon or glass matrix containing reinforcement distributed in one or more spatial directions

Note 1 to entry: Composites with continuous reinforcements constitute a specific class of these materials. Several subclasses of ceramic matrix composites with continuous reinforcements can be distinguished.

### 3.2

#### **nomenclature**

The symbol F/I/M applies usually to ceramic matrix composites:

- F indicates the chemical nature of fibrous reinforcement: C stands for carbon, SiC for silicon carbide, Al<sub>2</sub>O<sub>3</sub> for alumina, etc.
- I indicates the chemical nature of fibre/matrix interphase: C stands for carbon, BN for boron nitride, LaPO<sub>4</sub> for monazite, etc.
- M indicates the chemical nature of matrix: C for carbon, SiC for silicon carbide, Al<sub>2</sub>O<sub>3</sub> for alumina.

EXAMPLE 1 A ceramic matrix composite composed of a silicon carbide fibre, a carbon interphase and a silicon carbide matrix is denoted by SiC/C/SiC.