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SIST EN 13234:2007**

Fina keramika (sodobna keramika, sodobna tehnična keramika) - Mehanske lastnosti keramičnih kompozitov pri temperaturi okolice in pri zračnem tlaku - Ugotavljanje odpornosti proti širjenju razpoke s preskušanjem občutljivosti zareze (ISO 18608:2017)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure - Determination of the resistance to crack propagation by notch sensitivity testing (ISO 18608:2017)

Hochleistungskeramik - Mechanische Eigenschaften von keramischen Verbundwerkstoffen bei Umgebungstemperatur in Luft unter atmosphärischem Druck - Bestimmung der Rissausbreitungsbeständigkeit durch die Kerbempfindlichkeitsprüfung (ISO 18608:2017) <https://standards.iteh.ai/catalog/standards/sist/6a21a505-e674-4549-871b-d1a161c74db8/sist-en-iso-18608-2022>

Céramiques techniques - Propriétés mécaniques des céramiques composites à température ambiante sous pression atmosphérique - Détermination de la résistance à la propagation de fissure par un essai de sensibilité à l'entaille (ISO 18608:2017)

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ICS:

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EUROPEAN STANDARD

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Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure - Determination of the resistance to crack propagation by notch sensitivity testing (ISO 18608:2017)

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Contents	Page
European foreword.....	3

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European foreword

The text of ISO 18608:2017 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 18608:2022 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of an identical text or by endorsement, at the latest by October 2022, and conflicting national standards shall be withdrawn at the latest by October 2022.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.

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**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Mechanical properties of ceramic
composites at ambient temperature
in air atmospheric pressure —
Determination of the resistance
to crack propagation by notch
sensitivity testing**

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*Céramiques techniques — Propriétés mécaniques des céramiques
composites à température ambiante sous pression atmosphérique
— Détermination de la résistance à la propagation de fissure par un
essai de sensibilité à l'entaille*

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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Significance and use	2
6 Apparatus	4
6.1 Test machine.....	4
6.2 Load train.....	4
6.2.1 General.....	4
6.2.2 Grips.....	4
6.2.3 Load train couplers.....	4
6.3 Data recording system.....	5
6.4 Micrometers.....	5
6.5 Ligament size measuring device.....	5
7 Specimens	5
7.1 Un-notched test specimens.....	5
7.2 Notched test specimens.....	5
7.3 Notches.....	6
8 Test specimen preparation	7
8.1 Machining and preparation.....	7
8.2 Number of test specimens.....	7
9 Test procedure	7
9.1 Test on reference specimen.....	7
9.2 Test on notched specimen.....	7
9.2.1 Displacement rate.....	7
9.2.2 Measurement of test specimen dimensions.....	7
9.2.3 Test technique.....	7
9.2.4 Test validity.....	8
10 Calculation of results	8
10.1 Test specimen origin.....	8
10.2 Tensile strength of un-notched specimen.....	8
10.3 Tensile strength of the notched specimen.....	8
10.4 Plotting of notch sensitivity diagram.....	8
10.5 Calculation of equivalent fracture toughness for the different classes of behaviour.....	9
10.5.1 Class A behaviour.....	9
10.5.2 Class B behaviour.....	9
10.5.3 Class C behaviour.....	10
11 Test report	10
Bibliography	11

ISO 18608:2017(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 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.

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

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure — Determination of the resistance to crack propagation by notch sensitivity testing

1 Scope

This document describes a method for the classification of ceramic matrix composite (CMC) materials with respect to their sensitivity to crack propagation using tensile tests on notched specimens with different notch depths. Two classes of ceramic matrix composite materials can be distinguished: materials whose strength is sensitive to the presence of notches and materials whose strength is not affected. For sensitive materials, this document defines a method for determining equivalent fracture toughness.

The parameter, K_{eq} , is defined as the fracture toughness of a homogeneous material which presents the same sensitivity to crack propagation as the ceramic matrix composite material which is being considered. The definition of the K_{eq} parameter offers the possibility to compare ceramic matrix composite materials with other materials with respect to sensitivity to crack propagation.

For notch insensitive materials, the concept of K_{eq} does not apply.

This document applies to all ceramic matrix composites with a continuous fibre reinforcement, unidirectional (1 D), bidirectional (2 D), and tridirectional (x D, where $2 < x \leq 3$), loaded along one principal axis of reinforcement.

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 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 15733:2015, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure — Determination of tensile properties*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15733 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 <http://www.iso.org/obp>