ICS 81.060.30 SLOVENSKÁ TECHNICKÁ NORMA Júl 2022

STN	**Jemná keramika (špeciálna keramika, špeciálna technická keramika) Mechanické vlastnosti keramických kompozitov pri teplote okolia na vzduchu pri atmosférickom tlaku Stanovenie odolnosti proti tvoreniu trhlín pri skúške citlivosti na vrub (ISO 18608: 2017)**	**STN EN ISO 18608** 72 7527

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)

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. 06/22

Obsahuje: EN ISO 18608:2022, ISO 18608:2017

Oznámením tejto normy sa ruší
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 18608

April 2022

ICS 81.060.30 Supersedes EN 13234:2006

English Version

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)

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)

Hochleistungskeramik - Mechanische Eigenschaften von keramischen Verbundwerkstoffen bei Umgebungstemperatur in Luft unter atmosphärischem Druck - Bestimmung der Rissausbreitungsbeständigkeit durch die Kerbempfindlichkeitsprüfung (ISO 18608:2017)

This European Standard was approved by CEN on 27 March 2022.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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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.

This document supersedes EN 13234:2006.

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Endorsement notice

The text of ISO 18608:2017 has been approved by CEN as EN ISO 18608:2022 without any modification.

INTERNATIONAL STANDARD

ISO 18608

First edition
2017-03

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

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

INTERNATIONAL STANDARD **ISO 18608:2017(E)**

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*

