SLOVENSKI STANDARD
SIST EN ISO 24370:2023

01-maj-2023

Fina keramika (sodobna keramika, sodobna tehnična keramika) - Preskusne metode za ugotavljanje odpornosti monolitske keramike proti lomljenju pri sobni temperaturi z metodo upogibnega preskusa z zarezo (metoda CNB) (ISO 24370:2005)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for fracture toughness of monolithic ceramics at room temperature by chevron-notched beam (CNB) method (ISO 24370:2005)

Hochleistungskeramik - Prüfverfahren zur Bestimmung der Bruchzähigkeit monolithischer Keramik an Biegeproben mit Chevron-Kerb (CNB-Verfahren) (ISO 24370:2005)

Céramiques techniques - Méthode d'essai de ténacité à la rupture des céramiques monolithiques à température ambiante sur éprouvette entaillée en chevron (ISO 24370:2005)

Ta slovenski standard je istoveten z: **EN ISO 24370:2023**

ICS:

81.060.30	Sodobna keramika	Advanced ceramics

SIST EN ISO 24370:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 24370

March 2023

ICS 81.060.30

Supersedes EN 14425-3:2010

English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Test method for fracture toughness of monolithic ceramics at room temperature by chevron-notched beam (CNB) method (ISO 24370:2005)

Céramiques techniques - Méthode d'essai de ténacité à la rupture des céramiques monolithiques à température ambiante sur éprouvette entaillée en chevron (ISO 24370:2005)

Hochleistungskeramik - Prüfverfahren zur Bestimmung der Bruchzähigkeit monolithischer Keramik an Biegeproben mit Chevron-Kerb (CNB-Verfahren) (ISO 24370:2005)

This European Standard was approved by CEN on 10 March 2023.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 24370:2023 E

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European foreword

The text of ISO 24370:2005 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 24370:2023 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 September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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 14425-3:2010.

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Endorsement notice

The text of ISO 24370:2005 has been approved by CEN as EN ISO 24370:2023 without any modification.

INTERNATIONAL STANDARD

ISO 24370

First edition
2005-06-01

Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for fracture toughness of monolithic ceramics at room temperature by chevron-notched beam (CNB) method

Céramiques techniques — Méthode d'essai de ténacité à la rupture des céramiques monolithiques à température ambiante sur éprouvette entaillée en chevron

Reference number
ISO 24370:2005(E)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 24370 was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for fracture toughness of monolithic ceramics at room temperature by chevron-notched beam (CNB) method

1 Scope

This International Standard specifies a test method for determining the fracture toughness of monolithic ceramic materials at room temperature by the chevron-notched beam (CNB) method.

This International Standard is applicable to monolithic ceramics and whisker- or particulate-reinforced ceramics that are regarded as macroscopically homogeneous. It is not applicable to continuous-fibre reinforced ceramic composites.

This International Standard is usually applicable to ceramic materials with a fracture toughness less than about 12 MPa($m^{1/2}$). The test method is applicable to materials with a flat crack-growth resistance curve and may be applicable to materials with a rising crack-growth resistance curve (R-curve).

2 Normative references

The following referenced documents are indispensable for the application 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 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 14704:2000, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for flexural strength of monolithic ceramics at room temperature*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
stress intensity factor
K_I
magnitude of the elastic stress field singularity at the tip of a crack subjected to opening mode (mode I) displacement

NOTE It is a function of applied force and test specimen size, geometry and crack length.

3.2
fracture toughness
generic term for measures of the resistance of extension of a crack