SLOVENSKI STANDARD
SIST EN ISO 20509:2023

01-maj-2023

Fina keramika (sodobna keramika, sodobna tehnična keramika) - Ugotavljanje oksidacijske odpornosti neoksidne monolitne keramike (ISO 20509:2003)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of oxidation resistance of non-oxide monolithic ceramics (ISO 20509:2003)

Hochleistungskeramik - Bestimmung der Beständigkeit von nichtoxidischer monolithischer Keramik gegen Oxidation (ISO 20509:2003)

Céramiques techniques - Détermination de la résistance à l'oxydation des céramiques monolithiques (ISO 20509:2003)

Ta slovenski standard je istoveten z: **EN ISO 20509:2023**

ICS:

81.060.30	Sodobna keramika	Advanced ceramics

SIST EN ISO 20509:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20509

March 2023

ICS 81.060.30

English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of oxidation resistance of non-oxide monolithic ceramics (ISO 20509:2003)

Céramiques techniques - Détermination de la résistance à l'oxydation des céramiques monolithiques (ISO 20509:2003)

Hochleistungskeramik - Bestimmung der Beständigkeit von nichtoxidischer monolithischer Keramik gegen Oxidation (ISO 20509:2003)

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

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

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Contents

Page

European foreword

The text of ISO 20509:2003 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 20509:2023 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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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Endorsement notice

The text of ISO 20509:2003 has been approved by CEN as EN ISO 20509:2023 without any modification.

INTERNATIONAL STANDARD

ISO 20509

First edition
2003-12-01

Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of oxidation resistance of non-oxide monolithic ceramics

Céramiques techniques — Détermination de la résistance à l'oxydation des céramiques monolithiques

Reference number
ISO 20509:2003(E)

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Contents

Page

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.

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ISO 20509 was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Determination of oxidation resistance of non-oxide monolithic ceramics

1 Scope

This International Standard describes the method of test for determining the oxidation resistance of non-oxide monolithic ceramics, such as silicon nitride, Sialon[1)] and silicon carbide at high temperatures. This International Standard is intended to provide an assessment of the mass and dimensional changes of test pieces following oxidation at high temperature in an oxidizing atmosphere, and to assess whether oxidation has a significant effect on the subsequent strength. This test method may be used for materials development, quality control, characterization, and design data generation purposes.

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 3611:1978, *Micrometer callipers for external measurement*

ISO 6906:1984, *Vernier callipers reading to 0,02 mm*

ISO 7500-1:—[2)], *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*

IEC 60584-1:1995, *Thermocouples — Part 1: Reference tables*

IEC 60584-2:1989, *Thermocouples — Part 2: Tolerances*

3 Terms and definitions

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

3.1
oxidation resistance
resistance against oxidation of a non-oxide ceramic material due to reaction with oxygen in the surrounding atmosphere, including any internal reactions as a result of the presence of open porosity or of diffusion of ions to or from the ceramic surface

3.2
flexural strength
maximum nominal stress at fracture of a specified elastic beam loaded in bending

1) Sometimes written SiAlON is the acronym for a ceramic that contains silicon, aluminium, oxygen and nitrogen.

2) To be published. (Revision of ISO 7500-1:1999)