

**Advanced technical ceramics - Thermomechanical
properties of monolithic ceramics - Part 4:
Determination of flexural creep deformation at elevated
temperatures**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 820-4:2009 sisaldab Euroopa standardi EN 820-4:2009 ingliskeelset teksti.

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English Version

Advanced technical ceramics - Thermomechanical properties of
monolithic ceramics - Part 4: Determination of flexural creep
deformation at elevated temperatures

Céramiques techniques avancées - Propriétés
thermomécaniques des céramiques monolithiques - Partie
4 : Détermination de la déformation par fluage en flexion à
températures élevées

Hochleistungskeramik - Thermomechanische
Eigenschaften monolithischer Keramik - Teil 4:
Bestimmung der Kriechverformung unter
Biegebeanspruchung bei erhöhten Temperaturen

This European Standard was approved by CEN on 12 June 2009.

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Foreword

This document (EN 820-4:2009) has been prepared by Technical Committee CEN/TC 184 "Advanced technical ceramics", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes ENV 840-4:2001.

EN 820 consists of five parts, under the general title "Advanced technical ceramics - Methods of testing monolithic ceramics – Thermomechanical properties":

- Part 1: Determination of flexural strength at elevated temperatures
- Part 2: Determination of self-loaded deformation
- Part 3: Determination of resistance to thermal shock by water quenching
- Part 4: Determination of flexural creep deformation at elevated temperatures
- Part 5: Determination of elastic moduli at elevated temperatures

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1 Scope

This Part of EN 820 describes a procedure for undertaking flexural creep tests at elevated temperatures on advanced technical ceramics, mainly for the purposes of comparison of deformation behaviour of materials under stressed conditions and under any appropriate atmospheric condition.

NOTE This European Standard does not provide a method of acquiring engineering performance data since the stress distribution under flexural loading is indeterminate.

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.

EN 820-1, *Advanced technical ceramics – Methods of testing monolithic ceramics - Thermomechanical properties - Part 1: Determination of flexural strength at elevated temperatures*

EN 843-1, *Advanced technical ceramics – Mechanical properties of monolithic ceramics at room temperature - Part 1: Determination of flexural strength*

EN 1006, *Advanced technical ceramics - Monolithic ceramics - Guidance on the selection of test pieces for the evaluation of properties*

EN 60584-1, *Thermocouples - Part 1: Reference tables (IEC 60584-1:1995)*

EN 60584-2, *Thermocouples - Part 2: Tolerances (IEC 60584-2:1989 + A1:1989)*

EN ISO 7500-1, *Metallic materials - Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

ISO 3611, *Micrometer callipers for external measurement*