

**Advanced technical ceramics -
Monolithic ceramics. Mechanical
properties at room temperature - Part 4:
Vickers, Knoop and Rockwell
superficial hardness**

Advanced technical ceramics - Mechanical
properties of monolithic ceramics at room
temperature - Part 4: Vickers, Knoop and Rockwell
superficial hardness

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 843-4:2005 sisaldab Euroopa standardi EN 843-4:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 15.07.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 843-4:2005 consists of the English text of the European standard EN 843-4:2005. This document is endorsed on 15.07.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This part of EN 843 defines conditions for conducting, and provides guidelines concerning the value that may be ascribed to the results of, standard hardness tests when applied to advanced monolithic technical ceramics.	Scope: This part of EN 843 defines conditions for conducting, and provides guidelines concerning the value that may be ascribed to the results of, standard hardness tests when applied to advanced monolithic technical ceramics.
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Võtmesõnad: advanced technical ceramics, ceramics, environmental testing, knoop, Rockwell

English version

Advanced technical ceramics - Mechanical properties of
monolithic ceramics at room temperature - Part 4: Vickers,
Knoop and Rockwell superficial hardness

Céramiques techniques avancées - Propriétés mécaniques
des céramiques monolithiques à température ambiante-
Partie 4: Essais de dureté Vickers, Knoop et Rockwell
superficiel

Hochleistungskeramik - Mechanische Eigenschaften
monolithischer Keramik bei Raumtemperatur - Teil 4:
Härteprüfung nach Vickers, Knoop und Rockwell

This European Standard was approved by CEN on 29 April 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 843-4:2005) 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 December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

EN 843 'Advanced technical ceramics – Mechanical properties of monolithic ceramics at room temperature' consists of six parts:

Part 1: *Determination of flexural strength*

Part 2: *Determination of Young's modulus, shear modulus and Poisson's ratio*

Part 3: *Determination of subcritical crack growth parameters from constant stressing rate flexural strength tests*

Part 4: *Vickers, Knoop and Rockwell hardness tests*

Part 5: *Statistical analysis*

Part 6: *Guide for fractographic investigation*

This document supersedes ENV 843-4:1994.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This part of EN 843 defines conditions for conducting, and provides guidelines concerning the value that may be ascribed to the results of, standard hardness tests when applied to advanced monolithic technical ceramics. It is assumed that the calibration and test procedures employed are exactly those for metallic materials. This European Standard refers to Rockwell A, Rockwell N-scale, Vickers, and Knoop hardness testing, as described in existing international standards.

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 ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method* (ISO 6507-1:1997)

EN ISO 6507-2, *Metallic materials — Vickers hardness test — Part 2: Verification of testing machines* (ISO 6507-2:1997)

EN ISO 6507-3, *Metallic materials — Vickers hardness test — Part 3: Calibration of reference blocks* (ISO 6507-3:1997)

EN ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)* (ISO 6508-1:1999)

EN ISO 6508-2, *Metallic materials — Rockwell hardness test — Part 2: Verification and calibration of testing machines (scales A, B, C, D, E, F, G, H, K, N, T)* (ISO 6508-2:1999)

EN ISO 6508-3, *Metallic materials — Rockwell hardness test — Part 3: Calibration of reference blocks (scales A, B, C, D, E, F, G, H, K, N, T)* (ISO 6508-3:1999)

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories* (ISO/IEC 17025:1999)

EN ISO 23878, *Hardmetals — Vickers hardness test* (ISO 3878:1983)

ISO 4545, *Metallic materials — Hardness testing — Knoop test*

ISO 4546, *Metallic materials — Hardness test — Verification of Knoop hardness testing machines*

ISO 9385, *Glass and glass-ceramics — Knoop hardness test*

ISO 14705, *Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for hardness of monolithic ceramics at room temperature*

OIML-36, *Verification of indenters for hardness testing machines*.¹⁾

¹⁾ This international recommendation is available from the International Organization of Legal Metrology (OIML), 11, rue Tugot, 75009, Paris, France).