

**Advanced technical ceramics - Mechanical properties of  
monolithic ceramics at room temperature - Part 8:  
Guidelines for conducting proof tests**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 843-8:2010 sisaldab Euroopa standardi EN 843-8:2010 ingliskeelset teksti.

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Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.06.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 843-8:2010 consists of the English text of the European standard EN 843-8:2010.

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English Version

**Advanced technical ceramics - Mechanical properties of  
monolithic ceramics at room temperature - Part 8: Guidelines for  
conducting proof tests**

Céramiques techniques avancées - Propriétés mécaniques  
des céramiques monolithiques à température ambiante -  
Partie 8: Lignes directrices de conduite d'épreuves

Hochleistungskeramik - Mechanische Eigenschaften  
monolithischer Keramik bei Raumtemperatur - Teil 8:  
Leitlinien zur Durchführung von Überlast-Prüfungen

This European Standard was approved by CEN on 13 May 2010.

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## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Principle.....	5
5 Main considerations .....	5
6 Design of proof-test equipment .....	6
7 Test operation .....	7
8 Report .....	7
Annex A (informative) Basis of proof-testing .....	9
A.1 Short-term strength .....	9
A.2 Long-term effects.....	9
A.3 Defining the need to proof-test .....	10
Bibliography .....	11

## Foreword

This document (EN 843-8:2010) 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of an identical text or by endorsement, at the latest by December 2010, and conflicting national standards shall be withdrawn at the latest by December 2010.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.

EN 843, *Advanced technical ceramics — Mechanical properties of monolithic ceramics at room temperature*, consists of the following nine 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 superficial hardness*
- *Part 5: Statistical analysis*
- *Part 6: Guidance for fractographic investigation*
- *Part 7: C-ring tests*
- *Part 8: Guidelines for conducting proof tests*
- *FprCEN/TS 843-9, Advanced technical ceramics — Mechanical properties of monolithic ceramics at room temperature — Part 9: Method of test for edge-chip resistance*

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## 1 Scope

This European Standard describes requirements and methods for proof testing of advanced technical ceramic components. It provides general guidance concerning the design of the test and the methodology for the selection of loading conditions.

## 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 843-3, *Advanced technical ceramics — Mechanical properties of monolithic ceramics at room temperature — Part 3: Determination of subcritical crack growth parameters from constant stressing rate flexural strength tests*

EN 843-5, *Advanced technical ceramics — Mechanical properties of monolithic ceramics at room temperature — Part 5: Statistical analysis*

CEN/TS 14425-1, *Advanced technical ceramics — Test methods for determination of fracture toughness of monolithic ceramics — Part 1: Guide to test method selection*

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

## 3 Terms and definitions

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

### 3.1

#### **delayed failure**

fracture of an item after an extended period under stress

### 3.2

#### **item under test**

component to be subjected to the proof test

### 3.3

#### **proof test**

short-term test designed to investigate the mechanical or thermo-mechanical potential of a component, removing by fracture those components which do not meet specified levels

### 3.4

#### **proof-test ratio**

ratio of the stress to be applied in a short-term proof test to the expected long-term service stress within an item under test

NOTE "Item under test", see 3.2.

### 3.5

#### **sub-critical crack growth**

extension of existing cracks or flaws under a stress which does not produce instant failure