



National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 725-11:2006**

ICS 81.060.99

**ADVANCED TECHNICAL CERAMICS -  
METHODS OF TEST FOR CERAMIC  
POWDERS - PART 11: DETERMINATION OF  
DENSIFICATION ON NATURAL SINTERING**

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English Version

**Advanced technical ceramics - Methods of test for ceramic  
powders - Part 11: Determination of densification on natural  
sintering**

Céramiques techniques avancées - Méthodes d'essai pour  
poudres céramiques - Partie 11: Détermination de la  
densification lors du frittage naturel

Hochleistungskeramik - Prüfverfahren für keramische  
Pulver - Teil 11: Bestimmung der Verdichtungsverhaltens  
bei natürlichem Sinterbrand

This European Standard was approved by CEN on 25 May 2006.

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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.

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## Foreword

This document (EN 725-11:2006) 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of an identical text or by endorsement, at the latest by December 2006, and conflicting national standards shall be withdrawn at the latest by December 2006.

This document supersedes ENV 725-11:1993.

EN 725 *Advanced technical ceramics — Methods of test for ceramic powders* was prepared in Parts as follows:

- Part 1: *Determination of impurities in alumina*
- Part 2: *Determination of impurities in barium titanate*
- Part 3: *Determination of oxygen content of non-oxides by thermal extraction*
- Part 4: *Determination of oxygen content in aluminium nitride by XRF analysis*
- Part 5: *Determination of particle size distribution*
- Part 6: *Determination of specific surface area (withdrawn)*
- Part 7: *Determination of absolute density (withdrawn)*
- Part 8: *Determination of tapped bulk density*
- Part 9: *Determination of un-tapped bulk density*
- Part 10: *Determination of compaction properties*
- Part 11: *Determination of densification on natural sintering*
- Part 12: *Chemical analysis of zirconia*

Parts 6 and 7 of the series were superseded in 2005 by EN ISO 18757 and EN ISO 18753 respectively

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## EN 725-11:2006 (E)

### 1 Scope

This Part of EN 725 describes a method for determining the densification of ceramic powders on natural sintering, without the application of any external pressure. The method is applicable to pure oxides, mixtures of oxides and solid solutions. Inorganic sintering additives may be used where their presence is reported.

### 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 623-2:1993, *Advanced technical ceramics — Monolithic ceramics — General and textural properties — Part 2: Determination of density and porosity*

EN 725-10, *Advanced technical ceramics — Methods of test for ceramic powders — Part 10: Determination of compaction properties*

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*

### 3 Principle

Measurements are made of the mass, dimensions and density of a compacted piece of ceramic powder, before and after sintering through thermal treatment. The results depend on the maximum temperature and the density after compaction, and are expressed as a function of these two main parameters.

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