



National Standards Authority of Ireland

IRISH STANDARD

S.R CEN/TS 15658:2007

ICS 81.060.30

**ADVANCED TECHNICAL CERAMICS -
MECHANICAL PROPERTIES OF CERAMIC
FIBRES AT HIGH TEMPERATURE UNDER
NON-REACTIVE ENVIRONMENT -
DETERMINATION OF CREEP BEHAVIOUR BY
THE HOT END METHOD**

National Standards
Authority of Ireland
Glasnevin, Dublin 9
Ireland

Tel: +353 1 807 3800
Fax: +353 1 807 3838
<http://www.nsai.ie>

Sales
<http://www.standards.ie>

*This Irish Standard was
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of the National Standards
Authority of Ireland and
comes into effect on:
12 October 2007*

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 15658

September 2007

ICS 81.060.30

English Version

**Advanced technical ceramics - Mechanical properties of ceramic
fibres at high temperature under non-reactive environment -
Determination of creep behaviour by the hot end method**

Céramiques techniques avancées - Propriétés mécaniques
des fibres céramiques à haute température sous
environnement non réactif - Détermination du
comportement au fluage par la méthode des mors chauds

Hochleistungskeramik - Mechanische Eigenschaften von
Keramikfasern bei hohen Temperaturen in einer
reaktionsfreien Umgebung - Bestimmung des
Kriechverhaltens im Heißverbindungsverfahren

This Technical Specification (CEN/TS) was approved by CEN on 20 August 2007 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (CEN/TS 15658:2007) has been prepared by Technical Committee CEN/TC 184 “Advanced technical ceramics”, the secretariat of which is held by BSI.

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.

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CEN/TS 15658:2007 (E)

1 Scope

This Technical Specification specifies the conditions for the determination of the tensile creep deformation and failure behaviour of single filaments of ceramic fibres at high temperature and under test conditions that prevent changes to the material as a result of chemical reaction with the test environment.

This Technical Specification applies to continuous ceramic filaments taken from tows, yarns, braids and knitted structures, that have strains to failure less than or equal to 5 %.

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 1007-3, *Advanced technical ceramics — Ceramic composites — Methods of test for reinforcement — Part 3: Determination of filament diameter and cross-section area*

EN 1007-4, *Advanced technical ceramics — Ceramic composites — Methods of test for reinforcement — Part 4: Determination of tensile properties of filaments at ambient temperature*

CEN/TR 13233:2007, *Advanced technical ceramics — Notations and symbols*

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

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

EN 60584-2, *Thermocouples — Part 2: Tolerances (IEC 60584-2:1982 + A1:1989)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TR 13233:2007 and the following apply.

3.1 creep
time-dependent increase of gauge length starting from the time when the constant specified level of force is reached

3.2 gauge length
 L_0
initial distance between the gripped ends of filament

3.3 test temperature
 T
temperature of the filament in the gauge length

3.4 initial cross section area
 A_0
initial cross section area of the filament within the gauge length

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