

Irish Standard I.S. EN ISO 17140:2016

Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at room temperature -Determination of fatigue properties at constant amplitude (ISO 17140:2014)

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National Foreword

I.S. EN ISO 17140:2016 is the adopted Irish version of the European Document EN ISO 17140:2016, Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at room temperature - Determination of fatigue properties at constant amplitude (ISO 17140:2014)

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EUROPEAN STANDARD NORME EUROPÉENNE

EN ISO 17140

EUROPÄISCHE NORM

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Supersedes EN 15156:2006

English Version

Fine ceramics (advanced ceramics, advanced technical ceramics) - Mechanical properties of ceramic composites at room temperature - Determination of fatigue properties at constant amplitude (ISO 17140:2014)

Céramiques techniques - Propriétés mécaniques des céramiques composites à température ambiante -Détermination des propriétés de fatigue à amplitude constante (ISO 17140:2014) Hochleistungskeramik - Mechanische Eigenschaften von keramischen Verbundwerkstoffen bei Raumtemperatur - Bestimmung der Ermüdungseigenschaften bei konstanter Amplitude (ISO 17140:2014)

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Ref. No. EN ISO 17140:2016 E

EN ISO 17140:2016 (E)

Contents	Page
European foreword	

European foreword

The text of ISO 17140:2014 has been prepared by Technical Committee ISO/TC 206 "Fine ceramics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 17140:2016 by Technical Committee CEN/TC 184 "Advanced technical ceramics" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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INTERNATIONAL STANDARD

ISO 17140

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at room temperature — Determination of fatigue properties at constant amplitude

Céramiques techniques — Propriétés mécaniques des composites céramiques à température ambiante — Détermination des propriétés de fatigue à amplitude constante



Reference number ISO 17140:2014(E) ISO 17140:2014(E)



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Page

Contents

Fore	eword	iv
1	Scope	
2	Normative references	
3	Terms and definitions3.1General3.2Cyclic fatigue phenomena	1 1 3
4	Principle	
5	Significance and use	
6	Apparatus6.1Fatigue test machine6.2Load train6.3Extensometer6.4Data recording system6.5Micrometers	6
7	Test specimens	
8	Test specimen preparation8.1Machining and preparation8.2Number of test specimens	
9	Test procedure 9.1 Measurement of test specimen dimensions 9.2 Testing technique 9.3 Test validity	8 8 9 9
10	Calculation of results10.1Time to failure, t_f 10.2Damage parameters10.3Residual properties	
11	Test report	
Anne	ex A (informative) Schematic evolution of E	

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ISO 17140:2014(E)

Foreword

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The committee responsible for this document is ISO/TC 206, *Fine ceramics*.

Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at room temperature — Determination of fatigue properties at constant amplitude

1 Scope

This International Standard specifies the conditions for the determination of properties at constantamplitude of load or strain in uniaxial tension/tension or in uniaxial tension/compression cyclic fatigue of ceramic matrix composite materials (CMCs) with fibre reinforcement at room temperature.

This International Standard applies to all ceramic matrix composites with fibre reinforcement, unidirectional (1D), bi-directional (2D), and tri-directional (xD, where $2 < x \le 3$).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3611, Geometrical product specifications (GPS) — Dimensional measuring equipment: Micrometers for external measurements — Design and metrological characteristics

ISO7500-1, Metallic materials — Verification of static uniaxial testing machines — Part1: Tension/compression testing machines — Verification and calibration of the force-measuring system

ISO 9513, Metallic materials — Calibration of extensometer systems used in uniaxial testing

ISO 14544, Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at high temperature — Determination of compression properties

ISO 14574, Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at high temperature — Determination of tensile properties

ISO 15733, Fine ceramics (advanced ceramics, advanced technical ceramics) — Mechanical properties of ceramic composites at ambient temperature in air atmospheric pressure — Determination of tensile properties

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TR 13233¹) and the following apply.

3.1 General

3.1.1 calibrated length

part of the test specimen which has uniform and minimum cross-section area

1) Intended to be substituted by a future International Standard.



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