
**Fine ceramics (advanced ceramics,
advanced technical ceramics) —
Reinforcement of ceramic composites
— Determination of distribution
of tensile strength and tensile
strain to failure of filaments within
a multifilament tow at ambient
temperature**

*Céramiques techniques — Renfort de céramiques composites —
Détermination de la distribution de la résistance en traction et de
la déformation à la rupture en traction de filaments dans un fil
multifilamentaire à température ambiante*



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Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Significance and use	2
6 Apparatus	3
6.1 Tensile testing equipment	3
6.2 Data recording	4
7 Test specimen	4
7.1 General	4
7.2 Window type specimen	4
7.3 Cylindrical end type specimen	5
8 Test specimen preparation	5
8.1 General	5
8.2 Window type specimen	6
8.3 Cylindrical end type specimen	6
8.4 Number of test specimens	7
9 Test procedure	7
9.1 Determination of the initial cross-section area	7
9.2 Determination of the gauge length	7
9.3 Gripping	7
9.4 Selection of strain rate	8
9.5 Test procedure	8
9.6 Determination of load train compliance	8
9.7 Test validity	8
10 Calculation of results	8
10.1 Calculation of the load train compliance C_l	8
10.2 Calculation of probability of filament rupture P_j from the tests on specimens with a gauge length of 200 mm	10
10.2.1 Determination of the true origin	10
10.2.2 Construction of envelope curve and determination of instantaneous compliance C_{tj}	10
10.2.3 Probability of filament rupture	11
10.3 Distribution of filament rupture strain	12
10.3.1 Calculation of filament rupture strain	12
10.3.2 Filament rupture strain distribution	12
10.4 Distribution of filament strength	13
10.4.1 Initial cross-section area	13
10.4.2 Calculation of filament strength	13
10.4.3 Filament strength distribution	13
10.4.4 Average filament strengths	14
10.4.5 Mean filament strength	14
11 Test report	14
Annex A (informative) Abstract of the handbook of mathematical functions	16
Bibliography	17

Foreword

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Fine ceramics (advanced ceramics, advanced technical ceramics) — Reinforcement of ceramic composites — Determination of distribution of tensile strength and tensile strain to failure of filaments within a multifilament tow at ambient temperature

1 Scope

This document specifies the conditions for the determination of the distribution of strength and rupture strain of ceramic filaments within a multifilament tow at room temperature by performing a tensile test on a multifilament tow.

This document applies to dry tows of continuous ceramic filaments that are assumed to act freely and independently under loading and exhibit linear elastic behaviour up to failure. The outputs of this method are not to be mixed up with the strengths of embedded tows determined by using ISO 24046¹⁾.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 10119, *Carbon fibre — Determination of density*

EN 1007-2, *Advanced technical ceramics — Ceramic composites — Methods of test for reinforcements — Part 2: Determination of linear density*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

gauge length

L_0

initial distance between two reference points on the tow

Note 1 to entry: Usually the gauge length is taken as the distance between the gripped ends of the tow.

3.2

initial cross-section area

S_0

cross-section area of the tow

1) Under preparation.