
**Carbon-fibre-reinforced plastics —
Determination of compression-after-
impact properties at a specified
impact-energy level**

*Plastiques renforcés de fibres de carbone — Détermination des
propriétés de compression après impact à un niveau d'énergie spécifié*



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Published in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Principle	3
5 Conditioning of specimens and test environment	4
5.1 Standard conditioning procedure for specimens	4
5.2 Environmental test chamber for impact and compression tests	4
6 Test apparatus	4
6.1 General	4
6.2 Impact facility	4
6.3 Support fixture for specimen	4
6.4 Non-destructive testing instrument	6
6.5 Compression-testing machine	6
6.6 Compression-loading fixture	6
6.7 Measuring apparatus	7
6.8 Strain gauges	8
7 Specimens	8
7.1 Dimensions	8
7.2 Specimen preparation	9
7.3 Number of specimens	10
8 Procedure	10
8.1 Specimen conditioning	10
8.2 Measurement of specimen dimensions	10
8.3 Impact test	10
8.4 Non-destructive testing (NDT)	11
8.5 Inspection of specimens	11
8.6 Compression test	11
9 Validation	13
10 Calculation of results	14
10.1 CAI strength	14
10.2 CAI modulus	15
10.3 Maximum CAI strain	15
10.4 Rounding the results	15
10.5 Standard deviation and coefficient of variation	15
11 Test report	16
Annex A (normative) Detailed drawings of the components of the compression-loading fixture	17
Bibliography	20

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 18352 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

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Carbon-fibre-reinforced plastics — Determination of compression-after-impact properties at a specified impact-energy level

1 Scope

This International Standard specifies a method for determining the residual compression strength of multidirectional polymer matrix composite laminate plates that have been damaged by impact prior to the application of in-plane compressive loading.

The test method is suitable for continuous-fibre-reinforced polymer matrix composites. Application of the method is limited to fibre-reinforced plastic laminates with multidirectional reinforcements manufactured from unidirectional prepreg tapes/fabrics or woven fabrics.

The test method is referred to as the compression-after-impact (CAI) test when used to determine the residual compression strength of an impacted plate. It can be used to obtain data for material specification, material evaluation, research and development, or construction of a composite database.

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.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 1268-4:2005, *Fibre-reinforced plastics — Methods of producing test plates — Part 4: Moulding of prepregs*

ISO 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

ISO 14127, *Carbon-fibre-reinforced composites — Determination of the resin, fibre and void contents*

ISO 80000-1:—¹⁾, *Quantities and units — Part 1: General*

1) To be published. (Revision of ISO 31-0:1992)