INTERNATIONAL STANDARD

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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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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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

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)