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**Plastics — Determination of tensile  
properties —**

**Part 4:**

**Test conditions for isotropic and orthotropic  
fibre-reinforced plastic composites**

*Plastiques — Détermination des propriétés en traction —*

*Partie 4: Conditions d'essai pour les composites plastiques renforcés de  
fibres isotropes et orthotropes*



## 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.

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.

International Standard ISO 527-4 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 2, *Mechanical properties*.

Together with part 5, this part of ISO 527 cancels and replaces the first edition of ISO 3268 (ISO 3268:1978) which has been technically revised.

ISO 527 consists of the following parts, under the general title *Plastics — Determination of tensile properties*:

- *Part 1: General principles*
- *Part 2: Test conditions for moulding and extrusion plastics*
- *Part 3: Test conditions for sheet and film*
- *Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites*
- *Part 5: Test conditions for unidirectional fibre-reinforced plastic composites*

Annex A forms an integral part of this part of ISO 527. Annex B is for information only.

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# Plastics — Determination of tensile properties —

## Part 4:

## Test conditions for isotropic and orthotropic fibre-reinforced plastic composites

### 1 Scope

**1.1** This part of ISO 527 specifies the test conditions for the determination of the tensile properties of isotropic and orthotropic fibre-reinforced plastic composites, based upon the general principles given in part 1.

Unidirectionally reinforced materials are covered by part 5.

**1.2** See ISO 527-1, subclause 1.2.

**1.3** The test method is suitable for use with the following materials:

- fibre-reinforced thermosetting and thermoplastic composites incorporating non-unidirectional reinforcements such as mats, woven fabrics, woven rovings, chopped strands, combinations of such reinforcements, hybrids, rovings, short or milled fibres or preimpregnated materials (prepregs) (for directly injection-moulded specimens, see specimen 1A in ISO 527-2:1993);
- combinations of the above with unidirectional reinforcements and multidirectional reinforced materials constructed from unidirectional layers, provided such laminates are symmetrical (for materials with completely, or mainly, unidirectional reinforcements, see ISO 527-5);
- finished products made from these materials.

The reinforcement fibres covered include glass fibres, carbon fibres, aramid fibres and other similar fibres.

**1.4** The method is performed using specimens machined from a test panel made in accordance with ISO 1268 or by equivalent methods, or from finished and semi-finished products with suitable flat areas.

**1.5** See ISO 527-1, subclause 1.5.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 527. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 527 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 527-1:1993, *Plastics — Determination of tensile properties — Part 1: General principles*.