

Australian Standard™

**Determination of tensile properties of
plastics materials**

**Part 4: Test conditions for isotropic and
orthotropic fibre-reinforced plastic
composites**

[ISO title: Plastics—Determination of tensile properties, Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites]



S t a n d a r d s Australia

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CSIRO Building, Construction and Engineering
Plastics and Chemicals Industries Association
Royal Australian Chemical Institute
Telstra Corporation

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PREFACE

This Standard was prepared by the Standards Australia Committee PL-010, Methods of Testing Plastics.

This Standard is identical to and is reproduced from ISO 527-4:1997, *Determination of tensile properties of plastics materials, Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites*.

The objective of this Standard is to provide a test method for tensile testing of plastics materials.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
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<i>Reference to International Standard</i>		<i>Australian or Australian/New Zealand Standard</i>	
ISO/IEC		AS/NZS	
527	Plastics—Determination of tensile properties	1145	Determination of tensile properties of plastics materials
527-1	Part 1: General principles	1145.1	Part 1: General principals
527-2	Part 2: Test conditions for moulding and extrusion plastics	1145.2	Part 2: Test conditions for moulding and extrusion plastics
527-5	Part 5: Test conditions for unidirectional fibre-reinforced plastic composites	1145.5	Part 5: Test conditions for unidirectional fibre-reinforced plastic composites
1268	Plastics —Preparation of glass fibre reinforced, resin bonded, low-pressure laminated plates or panels for test purposes.	—	
2818	Plastics —Preparation of test specimens by machining.	—	
3534	Statistics —Vocabulary and symbols —Part 1: Probability and general statistical terms.	—	

AUSTRALIAN STANDARD

Determination of tensile properties of plastics materials

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.