SLOVENSKI STANDARD
SIST EN ISO 527-5:2009

01-december-2009

Nadomešča:
SIST EN ISO 527-5:1999

Polimerni materiali - Določevanje nateznih lastnosti - 5. del: Preskusni pogoji za enosmerno z vlakni ojačene polimerne kompozite (ISO 527-5:2009)

Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites (ISO 527-5:2009)

Kunststoffe - Bestimmung der Zugeigenschaften - Teil 5: Prüfbedingungen für unidirektional faserverstärkte Kunststoffverbundwerkstoffe (ISO 527-5:2009)

Plastiques - Détermination des propriétés en traction - Partie 5: Conditions d'essai pour les composites plastiques renforcés de fibres unidirectionnelles (ISO 527-5:2009)

Ta slovenski standard je istoveten z: **EN ISO 527-5:2009**

ICS:

83.120	Ojačani polimeri	Reinforced plastics

SIST EN ISO 527-5:2009 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 527-5

July 2009

ICS 83.120

Supersedes EN ISO 527-5:1997

English Version

Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites (ISO 527-5:2009)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 527-5:2009) has been prepared by Technical Committee ISO/TC 61 “Plastics" in collaboration with Technical Committee CEN/TC 249 “Plastics” the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2010, and conflicting national standards shall be withdrawn at the latest by January 2010.

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

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Endorsement notice

The text of ISO 527-5:2009 has been approved by CEN as a EN ISO 527-5:2009 without any modification.

INTERNATIONAL STANDARD

ISO 527-5

Second edition
2009-07-01

Plastics — Determination of tensile properties —

Part 5: Test conditions for unidirectional fibre-reinforced plastic composites

Plastiques — Détermination des propriétés en traction —

Partie 5: Conditions d'essai pour les composites plastiques renforcés de fibres unidirectionnelles

Reference number
ISO 527-5:2009(E)

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Published in Switzerland

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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 527-5 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 13, *Composites and reinforcement fibres*.

This second edition cancels and replaces the first edition (ISO 527-5:1997), of which it constitutes a minor revision. The main changes are as follows:

— the normative references have been updated;

— in 6.1.2, a thickness has been specified specifically for specimens from filament-wound test plates.

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 films and sheets*

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

— *Part 5: Test conditions for unidirectional fibre-reinforced plastic composites*

Plastics — Determination of tensile properties —

Part 5: Test conditions for unidirectional 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 unidirectional fibre-reinforced plastic composites, based upon the general principles given in Part 1.

1.2 See ISO 527-1:1993, Subclause 1.2.

1.3 The test method is suitable for all polymer matrix systems reinforced with unidirectional fibres and which meet the requirements, including failure mode, set out in this part of ISO 527.

The method is suitable for composites with either thermoplastic or thermosetting matrices, including preimpregnated materials (prepregs). The reinforcements covered include carbon fibres, glass fibres, aramid fibres and other similar fibres. The reinforcement geometries covered include unidirectional (i.e. completely aligned) fibres and rovings and unidirectional fabrics and tapes.

The method is not normally suitable for multidirectional materials composed of several unidirectional layers at different angles (see ISO 527-4).

1.4 The method is performed using one of two different types of test specimen, depending on the direction of the applied stress relative to the fibre direction (see Clause 6).

1.5 See ISO 527-1:1993, Subclause 1.5.

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

ISO 527-4, *Plastics — Determination of tensile properties — Part 4: Test conditions for isotropic and orthotropic fibre-reinforced plastic composites*

ISO 1268 (all parts), *Fibre-reinforced plastics — Methods of producing test plates*

ISO 2818, *Plastics — Preparation of test specimens by machining*

ISO 3534-1, *Statistics — Vocabulary and symbols — Part 1: General statistical terms and terms used in probability*