



SLOVENSKI STANDARD

SIST ISO 1926:2015

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Nadomešča:
SIST ISO 1926:1996

Penjeni polimerni materiali - Ugotavljanje nateznih lastnosti

Rigid cellular plastics - Determination of tensile properties

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Plastiques alvéolaires rigides - Détermination des caractéristiques en traction
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ICS:

83.100 Penjeni polimeri Cellular materials

SIST ISO 1926:2015 **en**

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INTERNATIONAL STANDARD

ISO 1926

Fourth edition
2009-12-01

Rigid cellular plastics — Determination of tensile properties

*Plastiques alvéolaires rigides — Détermination des caractéristiques en
traction*

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Reference number
ISO 1926:2009(E)

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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 1926 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 10, *Cellular plastics*.

This fourth edition cancels and replaces the third edition (ISO 1926:2005), of which it constitutes a minor revision. Changes have been made to the requirements for the conditioning of test specimens in 5.2.

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Rigid cellular plastics — Determination of tensile properties

1 Scope

This International Standard specifies a method of determining the behaviour of rigid cellular plastics materials when they are subjected to a tensile stress.

It applies primarily to cellular materials having a compression resistance sufficient to permit suitable gripping of the test specimens. If it is impossible to grip the test specimen, the method is modified so that the ends of the specimen are reinforced with metal plates (see Clause 8).

The relationship between cell size and test specimen size must be such that the test is realistic.

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*

[SIST ISO 1926:2015](http://standards.iteh.ai/SIST/ISO/1926/2015)

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

3 Principle

A test specimen of a given shape is subjected to a tensile stress transmitted to the test specimen by means of a suitable device and corresponding stress-strain curve is plotted.

4 Apparatus

The test machine shall be such that:

- a) It has clamps suitable for holding the test specimen. These clamps shall meet the following requirements:
 - 1) they shall close sufficiently tightly on the faces of the test specimen to avoid slipping;
 - 2) they shall not exert, on any part of the ends of the test specimen, localized pressure which could cause tears, deformations or ruptures.

In cases of difficulty, use the variant described in Clause 8.

- b) The movable clamp can be moved, with the test specimen in place, away from the fixed clamp at a constant speed of (5 ± 1) mm/min in a direction parallel to the longitudinal axis of the test specimen.
- c) The force thus exerted on the test specimen can be determined with a maximum error of 1 %, and can be recorded.

5.3 Number of test specimens

The test shall be carried out on at least five test specimens; any test specimens which break outside the extensometer gauge length shall be rejected and, if necessary, the number of test specimens subjected to the test shall be increased so that the number of significant results is not less than five.

If it is necessary to use more than seven test specimens to obtain five valid readings, use the method described in Clause 8.

6 Procedure (general method)

Carry out the test in a room in which the atmosphere is maintained at one of the sets of conditions defined in 5.2.

Place the test specimen between the clamps. If necessary, proceed in accordance with Clause 8. Mark the original gauge length on the test specimen.

Apply the force to be exerted on the test specimen in such a way that it is uniformly distributed by the movable grip, the rate of displacement of which shall be (5 ± 1) mm/min.

If an extensometer is not used, record the elongation corresponding to a given force at suitable intervals.

Plot the stress-strain curve.

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7 Calculation and expression of results

7.1 Elongation

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The elongation, e , expressed as a percentage of the original gauge length, is given by the equation

$$e = \frac{\Delta L_0}{L_0} \times 100$$

where

L_0 is the original gauge length of the test specimen, expressed in millimetres;

ΔL_0 is the increase in gauge length of the test specimen corresponding to a given force, measured by the variation in distance between the gauge marks, expressed in millimetres.

Calculate in particular (after determination, from the stress-strain curve, of the corresponding elongations):

- the elongation e_{\max} at the maximum stress (if applicable);
- the elongation e_r at rupture.