SLOVENSKI STANDARD
oSIST prEN ISO 6259-1:2013

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Plastomerne cevi - Ugotavljanje nateznih lastnosti - 1. del: Splošna preskusna metoda (ISO/DIS 6259-1:2013)

Thermoplastics pipes - Determination of tensile properties - Part 1: General test method (ISO/DIS 6259-1:2013)

Rohre aus Thermoplasten - Bestimmung der Eigenschaften im Zugversuch - Teil 1: Allgemeines Prüfverfahren (ISO/DIS 6259-1:2013)

Tubes en matières thermoplastiques - Détermination des caractéristiques en traction - Partie 1: Méthode générale d'essai (ISO/DIS 6259-1:2013)

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ICS:

23.040.20 Cevi iz polimernih materialov Plastics pipes

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Thermoplastics pipes — Determination of tensile properties —

Part 1:
General test method

Tubes en matières thermoplastiques — Détermination des caractéristiques en traction —

Partie 1: Méthode générale d'essai

[Revision of first edition (ISO 6259-1:1997)]

ICS: 23.040.20

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

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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 6259-1 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 5, *General properties of pipes, fittings and valves of plastic materials and their accessories - Test methods and basic specifications*.

ISO 6259 consists of the following parts, under the general title Thermoplastics pipes — Determination of *tensile properties*:

— *Part 1: General test method*

— *Part 2: Pipes made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) and high-impact poly(vinyl chloride) (PVC-HI)*

— *Part 3: Polyolefin pipes*

This second edition cancels and replaces the first edition (ISO 6259-1:1997), and has been technically revised. Attention has been drawn to ISO 7500-1:2004 for verification and calibration of the load measuring system. A note has been added concerning ‘pre-stress’ of the test specimen.

Introduction

This part of ISO 6259 specifies a short-term tensile test method for determining the tensile properties of thermoplastics pipes.

It can provide data for further testing for the purpose of research and development.

It cannot be regarded as significant for applications in which the conditions of application of the force differ considerably with those in this test method, such applications requiring the appropriate impact, creep and fatigue tests.

The tests of tensile properties should be principally regarded as tests of material in the form of pipe. The results can be useful as a material process control test, but are not a quantitative assessment of long term pipe performance.

ISO 6259 has been drawn up on the basis of ISO 527.

For ease of use, it has been thought preferable to draw up a complete document that can be used for determining the tensile properties of thermoplastics pipes. For greater detail, reference should be made to ISO 527.

It should however be noted that ISO 527 is applicable to materials in sheet form, whereas ISO 6259 is applicable to materials in pipe form.

As it was considered essential to test the pipes as supplied, i.e. without reduction in thickness, difficulties are those in the choice of test piece.

ISO 527 specifies test pieces a few millimetres thick, whereas the thickness of a pipe can be in excess of 50 mm. This is why certain changes have been made on this point.

For thin-walled pipes, the test piece can be obtained by die cutting, while for thick pipes, it can be obtained only by machining.

At present, ISO 6259 comprises three parts. The first part gives the general conditions under which the tensile properties of thermoplastics pipes are to be determined. The other two parts provide, respectively, particular information on the execution of tests on pipe made from different materials (see the foreword).

The basic specifications for the various materials are given in informative annexes in the relevant parts.

Thermoplastics pipes – Determination of tensile properties – Part 1: General test method

1 Scope

This International Standard specifies a method of determining the tensile properties of thermoplastics pipes, including in particular the following properties:

— stress at yield;

— elongation at break.

This part of ISO 6259 is applicable to all types of thermoplastics pipe, regardless of their intended use.

2 Normative reference

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 527-1:2012, *Plastics - Determination of tensile properties - Part 1: General principles*

ISO 1167-1, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method (ISO 1167-1:2006)*

ISO 2602, *Statistical interpretation of test results — Estimation of the mean — Confidence interval*

ISO 5893:2002, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Description*

ISO 6259-2:1997, *Thermoplastics pipes — Determination of tensile properties — Part 2: Pipes made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) and high-impact poly(vinyl chloride) (PVC-HI)*

ISO/CD 6259-3:2013, *Thermoplastics pipes — Determination of tensile properties — Part 3: Polyolefin pipes*

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Geometric definitions

3.1.1
nominal size DN/OD
numerical designation of the size of a component, other than a component designated by thread size, which is a convenient round number, approximately equal to the manufacturing dimension, related to the outside diameter

Note 1 to entry: It is expressed in millimetres (mm).

3.1.2
nominal outside diameter
d_n
specified outside diameter, assigned to a nominal size DN/OD

Note 1 to entry: It is expressed in millimetres (mm).

3.1.3
nominal wall thickness
e_n
numerical designation of the wall thickness of a component, which is a convenient round number, approximately equal to the manufacturing dimension

Note 1 to entry: It is expressed in millimetres (mm).

Note 2 to entry: For thermoplastics components conforming to the different parts of ISO 4437, the value of the nominal wall thickness, e_n, is identical to the specified minimum wall thickness at any point, e_{min}.

3.1.4
thickness
h
smaller initial dimension of the rectangular cross section in the central part of a test specimen

Note 1 to entry: It is expressed in millimetres (mm).

3.1.5
width
b
larger initial dimension of the rectangular cross section in the central part of a test specimen

Note 1 to entry: It is expressed in millimetres (mm).

3.1.6
initial cross-section
A
the product of initial width and thickness of a test specimen, (ie $A = bh$)

Note 1 to entry: It is expressed in square millimetres (mm^2).

3.1.7
initial gauge length
L_0
initial distance between the gauge marks on the central part of the test specimen

Note 1 to entry: It is expressed in millimetres (mm).