INTERNATIONAL STANDARD

ISO 6259-3

Second edition
2015-06-15

Thermoplastics pipes — Determination of tensile properties —

Part 3: Polyolefin pipes

Tubes en matières thermoplastiques — Détermination des caractéristiques en traction —

Partie 3: Tubes en polyoléfines

Reference number
ISO 6259-3:2015(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is 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*.

This second edition cancels and replaces the first edition (ISO 6259-3:1997) which has been technically revised.

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*

Introduction

This part of ISO 6259 specifies a method for determining the tensile properties of polyolefin 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 are intended to 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 can be made to ISO 527.

However, let it 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 3: Polyolefin pipes

1 Scope

This part of ISO 6259 specifies a method of determining the tensile properties of polyolefin (polyethylene, cross-linked polyethylene, polypropylene, and polybutene) pipes, and the following properties:

— the stress at yield;

— the elongation at break.

This part of ISO 6259 also gives the corresponding basic specifications in Annexes A to D for information purposes only.

2 Normative reference

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 6259-1:2015, *Thermoplastics pipes — Determination of tensile properties — Part 1: General test method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6259-1 apply.

4 Principle

See ISO 6259-1:2015, Clause 4, applicable to thermoplastics materials covered by this part of ISO 6259.

5 Apparatus

See ISO 6259-1:2015, Clause 5, applicable to thermoplastics materials covered by this part of ISO 6259.

6 Test pieces

6.1 Selection of the test pieces

6.1.1 General

The test pieces shall be obtained by die cutting or machining.

NOTE 1 When the thickness of the pipe is less than or equal to 12 mm, the test pieces are to be die cut preferably. When the thickness of the pipes is greater than 12 mm the test pieces are to be machined preferably.