



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 3458:2013**  
**01-oktober-2013**

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**Cevni sistemi iz polimernih materialov - Mehanski spoji med fittingi in tlačnimi cevmi - Metoda za preskus tesnjenja spojev, ki so obremenjeni z notranjim hidrostatičnim tlakom (ISO/DIS 3458:2013)**

Plastics piping systems - Mechanical joints between fittings and pressure pipes - Test method for leaktightness under internal pressure (ISO/DIS 3458:2013)

Kunststoff-Rohrleitungssysteme - Mechanische Verbindungen zwischen Fittings und Druckrohren - Prüfung der Dichtheit bei Innendruck (ISO/DIS 3458:2013)

Systèmes de canalisations en plastique - Assemblages mécaniques entre raccords et tubes sous pression - Méthode d'essai pour l'étanchéité sous pression interne (ISO/DIS 3458:2013)

**Ta slovenski standard je istoveten z: prEN ISO 3458 rev**

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**ICS:**

23.040.60 Prirobnice, oglavki in spojni elementi Flanges, couplings and joints

**oSIST prEN ISO 3458:2013**

**en**



# DRAFT INTERNATIONAL STANDARD

## ISO/DIS 3458

ISO/TC 138/SC 5

Secretariat: NEN

Voting begins on:  
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## Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under internal pressure

*Assemblages entre raccords et tubes sous pression en polyéthylène (PE) — Essai d'étanchéité à la pression intérieure*

[Revision of first edition (ISO 3458:1976)]

ICS: 23.040.60

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### 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 3458 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*.

This second edition cancels and replaces the first edition (ISO 3458:1976), clauses 2, 3, 5 and figure 1 of which have been technically revised.

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# Plastics piping systems — Mechanical joints between fittings and pressure pipes — Test method for leaktightness under internal pressure

## 1 Scope

This International Standard specifies the method of test for checking the leaktightness of assembled joints (excluding fusion-welded joints) between mechanical fittings and thermoplastic pressure pipes. The test applies regardless of the design and material of the fitting used for jointing thermoplastics pipe.

## 2 Test Parameters and Requirements

The test parameters of the corresponding product standards shall be used and the requirements shall be fulfilled.

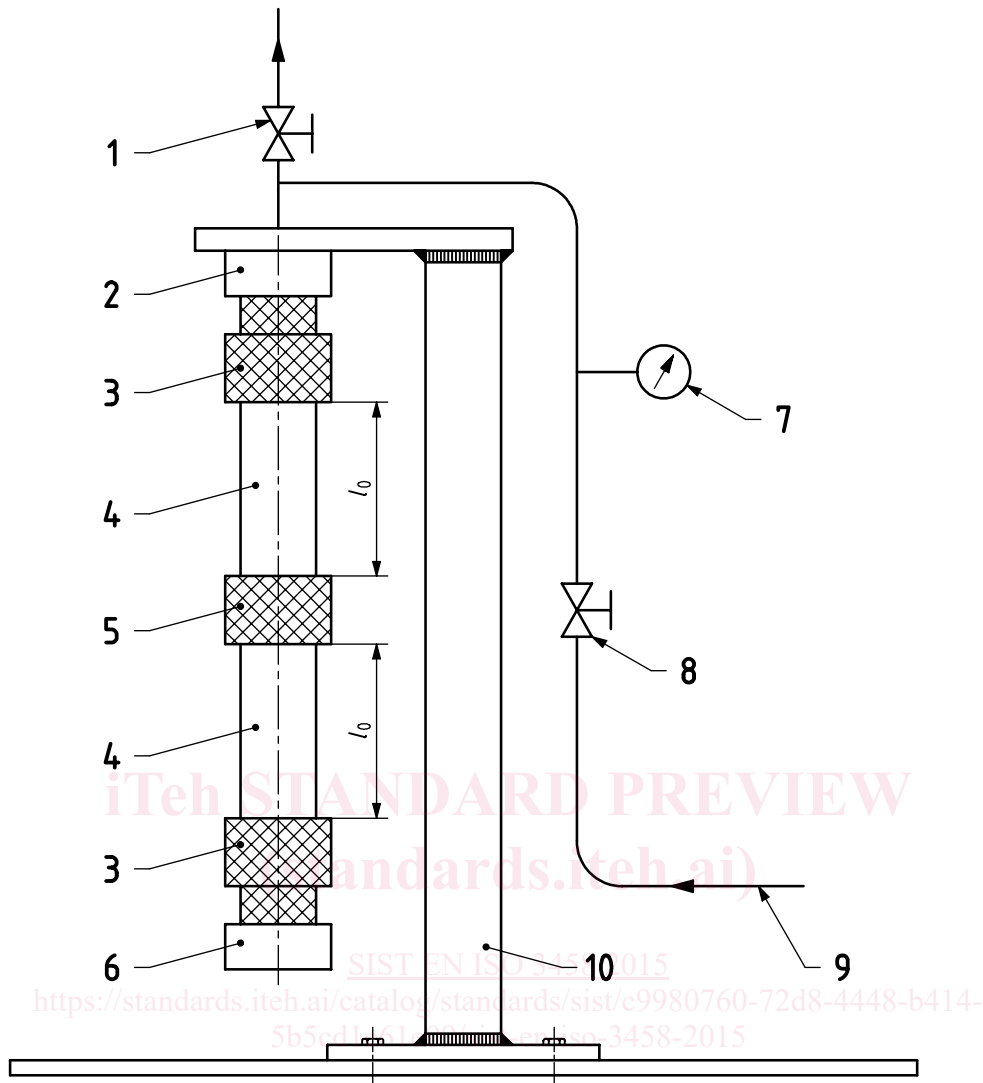
## 3 Principle

The leaktightness of an assembled joint is checked while the joint is subjected to an internal test pressure greater than the nominal pressure for which the pipe is rated with the pieces joined subject to the longitudinal force induced by the hydrostatic end thrust.

## 4 Apparatus

- 4.1 A suitable apparatus is shown in Figure 1. <https://standards.iteh.ai/catalog/standards/sist/c9980760-72d8-4448-b414->
- 4.2 **Pressure source** connected to the test specimens, capable of maintaining for at least 1 h a minimum water or air pressure to an accuracy of  $\pm 2\%$ .
- 4.3 **Pressure measuring device**, capable of checking performance of the test pressure with 4.2.

**WARNING: It is necessary to take account of the consequences of failure of the components under pressure and to contain the test piece or apparatus accordingly.**



**Key**

- 1 Air release valve
- 2 Connecting pipe
- 3 Fitting to be tested
- 4 Pipe piece
- 5 Fitting (option) to be tested
- 6 Endcap
- 7 Pressure measuring device
- 8 Valve
- 9 Connection pressure source
- 10 Supporting frame
- $l_0$  Pipe free length

**Figure 1 — Diagram of typical apparatus**

NOTE If the test is performed in a water bath, pressure equipment for detecting leakage is optional.



## 5 Test pieces

The test specimen shall consist of one or more joints formed by the assembly of at least one fitting and one or more pieces of thermoplastic pressure pipe of the size and quality for which the fitting is designed.

The free length,  $l_0$ , of each pipe shall be at least three times the nominal outside diameter  $d_n$ , with a minimum of 250 mm.

If, for pipes with  $d_n$  greater than 315 mm, the specified minimum free length cannot be achieved, a shorter free length may be chosen with a minimum of two times  $d_n$ , unless otherwise specified in the referring standard or specification. One end of the test specimen shall be connected to the pressure source. The other end(s) shall be sealed off in such a way that, when the test pressure is applied, longitudinal stresses are exerted within the pipe wall due to the pressure acting on the end fittings.

The assembly of the joint should be carried out in accordance with the manufacturer's instructions.

## 6 Procedure

Fill the test specimen with water or air at the specified test temperature. If water is used as test medium ensure all air is removed and excluded from the test piece for the remainder of the procedure.

Secure the test specimen to the apparatus. Wait 1 h for equalization of temperature.

If water is used as test medium and the test is carried out in open air, ensure that the outside of the test specimen is completely dry.

After conditioning, progressively and smoothly apply the specified test pressure in the shortest time practicable. The test starts on achieving the required test pressure.

Maintain the specified temperature within  $\pm 2$  °C, and pressure within 2 %, while monitoring the apparatus for any indication of a loss of pressure and the test piece for any signs of leakage for the specified time or until failure as follows:

- a) terminate the test and record the observations if during the period the pressure cannot be maintained and the losses occurred at the joint, or within a distance of one pipe diameter from the joint under test;
- b) repeat the test if the pipe(s) fail(s) at a position further than one diameter from the joint(s) under test.

If air is used as test medium, leakage can be detected with leak detection fluid.

## 7 Test Report

The test report shall include the following information:

- a) a reference to this standard and to the referring standard;
- b) the nominal pressure class or S series of the components (e.g. fitting(s), pipe) comprising the joint(s) under test;
- c) all details necessary for identification of the test pieces, including the nominal size of the pipes and fittings used to produce the test pieces, the type of material and the manufacturer's code;
- d) the free length;
- e) the test medium;
- f) the test period;

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- g) the test pressure;
- h) the test temperature;
- i) information on the leaktightness of the joint including the pressure at which a leakage occurred (if any);
- j) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;
- k) the date of test.

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