
Cevni sistemi iz plastomernih materialov - Natezno trdni mehanski spoji med tlačnimi cevmi in fittingi z majhnimi premeri - Metoda za preskus tesnjenja spojev, ki so obremenjeni z notranjim hidrostatičnim tlakom in osno obremenitvijo

Thermoplastics piping systems - End-load bearing joints between small diameter pressure pipes and fittings - Test method for leaktightness under internal water pressure, including end thrust

Rohrleitungssysteme aus Thermoplasten - Zugfeste Verbindungen zwischen Druckrohren und Formstücken mit kleinen Durchmessern - Prüfverfahren für die Dichtigkeit unter Innendruck mittels Wasser und unter Axialbeanspruchung

[SIST EN 715:1997](https://standards.iteh.ai/catalog/standards/sist/e695ca4f-7d15-4e8d-8d36-120101000000/sist-en-715-1997)

Systemes de canalisations thermoplastiques - Assemblages avec effet de fond entre tubes de petit diametre avec pression et raccords - Méthode d'essai d'étanchéité avec pression d'eau interne avec effet de fond

Ta slovenski standard je istoveten z: EN 715:1994

ICS:

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

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EUROPEAN STANDARD

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English version

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This standard was prepared by CEN/TC 155 "Plastics piping systems and ducting systems". It received approval from the CEN members on 1993-09-16

This standard is based on the international standard ISO 3458:1976 "Assembled joints between fittings and polyethylene (PE) pressure pipes - Test of leakproofness under internal pressure", prepared by the International Organization for Standardization (ISO). It is a modification of ISO 3458:1976 for reasons of applicability to other plastics materials, other sizes, and/or other test conditions and alignment with texts of other standards on test methods.

The modifications are:

- no material is mentioned;
- test parameters, except those common to all plastics, are omitted;
- the diameter limit is extended from 63 mm to 90 mm;
- no material-dependent requirements are given;
- editorial changes have been introduced.

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The material-dependent parameters and/or performance requirements are incorporated in the System Standard(s) concerned.

No existing European Standard is superseded by this standard.

This standard is one of a series of standards on test methods which support System Standards for plastics piping systems and ducting systems.

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 July 1994, and conflicting national standards shall be withdrawn at the latest by July 1994.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This standard specifies a method for testing the leaktightness of end-load-bearing joints, e.g. cemented joints and assembled joints (excluding fusion-welded joints), between mechanical fittings and thermoplastics pipes under internal water pressure, including end thrust, of diameters up to and including 90 mm.

The method is applicable regardless of the design and material of the fitting used for jointing pipes.

2 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.

NOTE 1: It is assumed that the following test parameters are set by the standard making reference to this standard:

- a) the free length, L , of the pipe(s) in the test assembly (see clause 4 and figure 1);
- b) the test temperature, T , in degrees Celsius (see clause 6);
- c) the test pressure, p , in bar (see 3.1 and clause 6);
- d) the time under pressure, t , in minutes (see clause 6);
- e) the maximum diameter to which this test can be applied.

NOTE 2: The purpose of the original test given in ISO 3458 was to provide for a short-term (1 h) test at a pressure which exceeded the nominal pressure (PN) of the pipe under test. For pipes of nominal diameter up to 63 mm, the test pressure was three times PN.

3 Apparatus

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.

A typical apparatus is shown in figure 1.

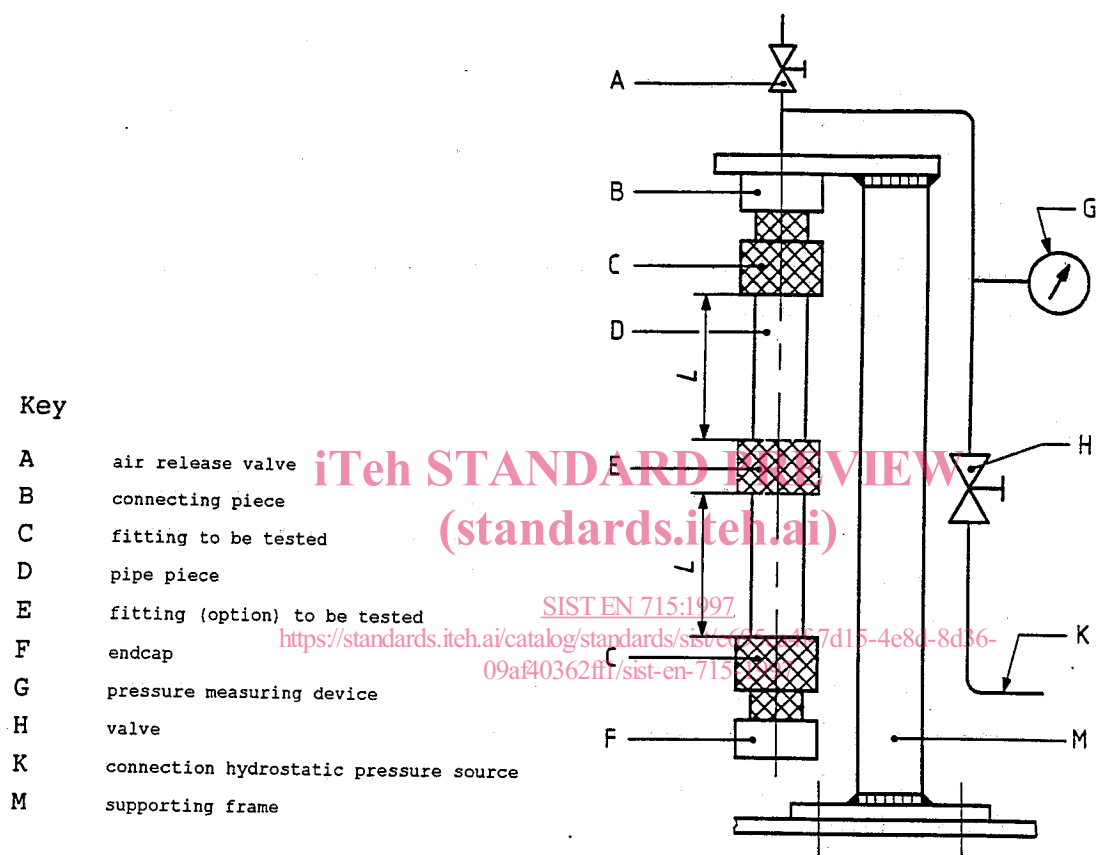


Figure 1: Diagram of typical apparatus

3.1 Pressure source, connected to the test piece, e.g. as shown in figure 1, capable of maintaining the specified internal water pressure to an accuracy of $\pm 2\%$;

3.2 Pressure measuring device, capable of checking conformance of the test pressure with 3.1.

4 Test piece

The test piece shall consist of an assembly of (a) pipe-section(s) and fitting(s) including at least one joint of the type to be tested. The pipe-sections shall be of the size and type for which the joint(s) is (are) designed.

The components for the test piece shall not be assembled until at least 24 h after their production.

The free length, L , of each pipe in the test assembly shall be a minimum of 300 mm.

One end of the test piece 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 each pipe wall by the water pressure acting on the end fittings.

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

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5 Procedure

Fill the test piece with water at the specified test temperature, T , ± 2 °C.

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Ensure that all air is removed and excluded from the test piece for the remainder of the procedure.

Secure the test piece to the apparatus.

Wait at least 20 min for equalization of temperature.

Ensure that the outside of the test piece is completely dry.

Apply pressure at a steady rate so as to achieve the specified test pressure, p , in (30 ± 5) s.

Maintain the specified temperature, T , within ± 2 °C, and pressure, p , 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, t , or until prior failure as follows:

- a) terminate the test and record the observations if during the period, t , 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.

6 Test report

The test report shall include the following information:

- a) a reference to this standard and to the referring standard;
- b) the identity of the components [e.g. fitting, pipe(s)] comprising the joint under test and their measured dimensions;
- c) the free length, L , in millimetres;
- d) the test temperature, T , in degrees Celsius;
- e) the test pressure, p , in bars ¹⁾;
- f) the time under pressure, t , in minutes;
- g) a report of any signs of leakage observed and of the pressure at which any such leakage occurred or, if no leakage was observed, a declaration that the joint did not leak;
- h) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;
- i) the date of test.

1) 1 bar = 10^5 N/m²