SLOVENSKI STANDARD
SIST EN 713:1997

01-februar-1997

Cevni sistemi iz polimernih materialov - Mehanski spoji med fitingi in tlačnimi cevmi iz poliolefinov - Metoda za preskus tesnjenja spojev, ki so obremenjeni z notranjim tlakom in podvrženi upogibu

Plastics piping systems - Mechanical joints between fittings and polyolefin pressure pipes - Test method for leaktightness under internal pressure of assemblies subjected to bending

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Kunststoff-Rohrleitungssysteme - Mechanische Verbindungen zwischen Formstücken und Druckrohren aus Polyolefinen - Prüfverfahren für die Dichtheit unter Innendruck und Biegung

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Systemes de canalisations plastiques - Assemblages mécaniques entre raccords et tubes en polyolefine avec pression - Essai d'étanchéité sous pression interne des assemblages soumis a une courbure

Ta slovenski standard je istoveten z: **EN 713:1993**

ICS:

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

SIST EN 713:1997 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD **EN 713**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 1993

UDC 621.643.4-036:621.643.2.06:620.165.29

Descriptors: Pipelines, pressure pipes, plastic pipes, polyolefines, pipe fittings, joints, watertightness, pressure tests

English version

Plastics piping systems - Mechanical joints between fittings and polyolefin pressure pipes - Test method for leaktightness under internal pressure of assemblies subjected to bending

Systèmes de canalisations plastiques - Assemblages mécaniques entre raccords et tubes en polyolefine avec pression - Essai d'étanchéité sous pression interne des assemblages soumis à une courbure

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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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

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Foreword

This standard is prepared by CEN/TC 155 "Plastics piping systems and ducting systems".

This standard is based on the international standard ISO 3503:1976 "Assembled joints between fittings and polyethylene (PE) pressure pipes - Test of leakproofness under internal pressure when subjected to bending", published by the International Organization for Standardization (ISO). It is a modification of ISO 3503:1976 for reasons of applicability to other plastics materials and/or other test conditions and alignment with texts of other standards on test methods.

The modifications are:

- no specific polyolefins are mentioned;
- test parameters, except those common to all polyolefins, are omitted;
- no diameter limit is included;
- 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 standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of the EC Directive(s).

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

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Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This standard specifies a method for checking the leaktightness under internal hydrostatic pressure of assembled mechanical joints (excluding fusion-welded joints) between fittings and polyolefin pressure pipes while subjected to bending.
It details a calculation method for the average bending radius and the procedure for achieving this bending (see note).

Checking of the leaktightness under internal pressure is carried out in accordance with the method given in EN 715.

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

2 Normative references

This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.
For dated references, subsequent amendments to, or revisions of, any of these publications apply to this European standard only when incorporated in it by amendment or revision.
For undated references the latest edition of the publication referred to applies.

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EN 715 [1] *Plastics piping systems - Mechanical joints between pressure pipes and fittings - Test method for leaktightness under internal pressure*

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[1] In course of preparation

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3 Principle

The leaktightness of the joint is checked for an assembly comprising a pipe onto at least one end of which is mounted a fitting characteristic of the type under test and through which the necessary forces are applied for bending the pipe throughout its free length.

The bend has an average radius calculated as a function of the nominal diameter of the pipe and its nominal pressure.

The bent test piece and its joint are subjected at a specified temperature to a specified internal hydrostatic pressure for a specified period and by increasing pressure until the joint fails by leakage or the pipe bursts.

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

a) if applicable, the bending radius, R, in millimetres (see 4.1);

b) the test pressure, p, in bars;

c) the time under pressure, t, in minutes;

d) the test temperature, T, in degrees Celsius;

e) the maximum diameter for which this test method is applicable.

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4 Apparatus

WARNING: It is necessary to take account of consequences of failure of the components under pressure and to contain the test piece or apparatus accordingly, e.g., immersed in water or caged.

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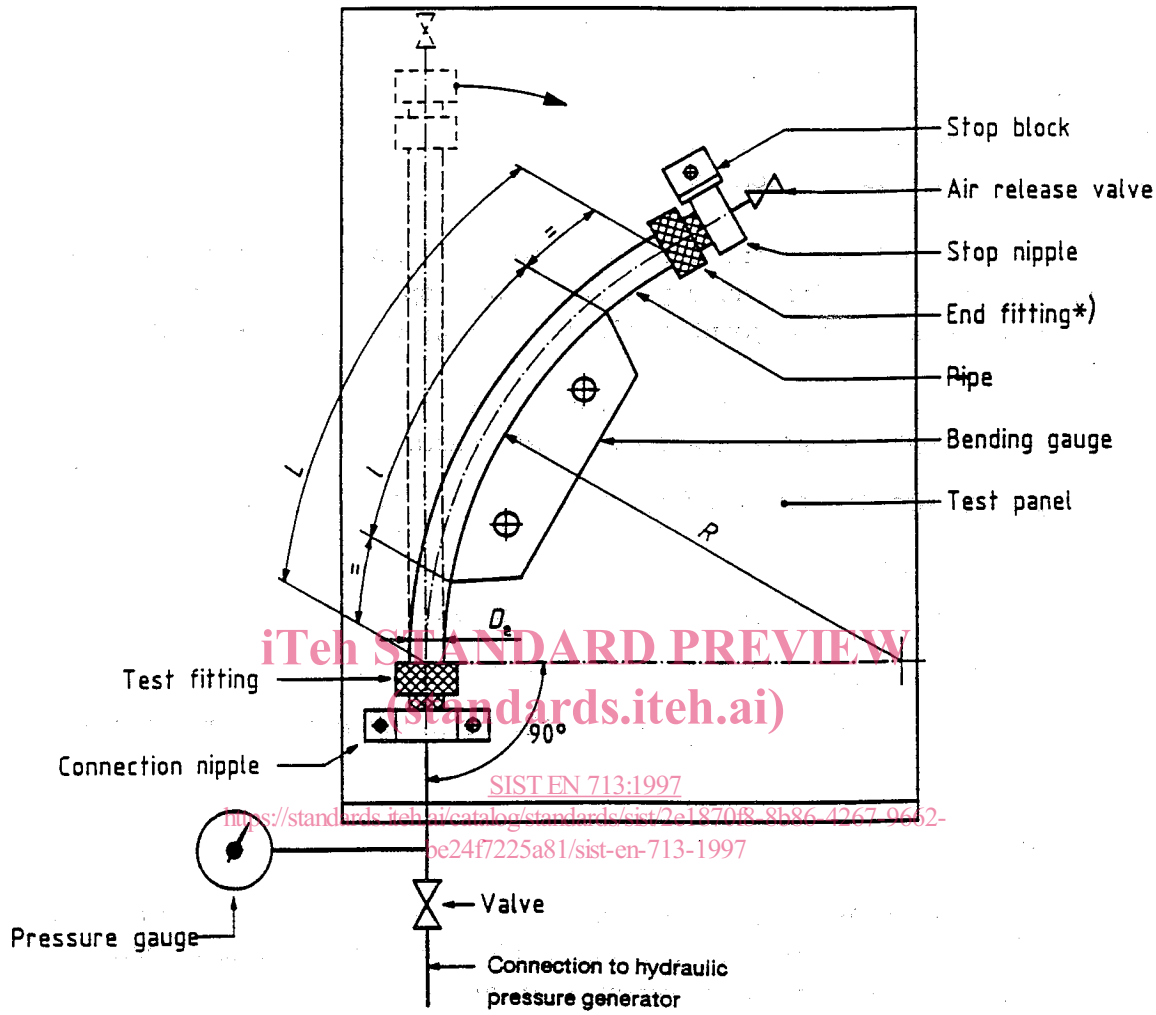

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*) The end fitting is only used for closing the test piece

Figure 1: Diagram of typical apparatus

4.1 Bending-gauge, having a bearing length, *l*, equal to three-quarters of the free length, *L*, between fittings, i.e. equal to 7,5 times the nominal outside diameter of the pipe, d_n (see clause 5 and figure 1, where a typical apparatus is shown).

This bearing length, *l*, shall have a bending radius, *R*, equal to that specified for the pipe under test, as given in table 1, unless otherwise specified in the referring standard.

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NOTE: 4.1 applies unless otherwise specified in the referring standard.

Table 1: Bending radius, R, as a function of the nominal pressure of the pipe

Nominal pressure	R
$\leq$ 10 bar[1)]	$15d_n$
> 10 bar	$20d_n$

1) 1 bar = 10^5 N/m^2

4.2 Hydrostatic pressurizing system, conforming to EN 715.

5 Test piece

The test piece shall be constructed using a pipe of a type and size to suit the design of the fitting to be tested.

Pipes and fittings to be assembled shall be at least 24 h old.

The assembly of the joint shall be carried out in accordance with the manufacturer's instructions such that testing can be conducted in accordance with EN 715, except that after assembly the free length, L, of the pipe between the fittings shall be 10 times the nominal outside diameter of the pipe.

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6 Procedure

WARNING: All necessary precautions should be taken when testing using components under pressure.

Carry out the test with an average bending radius, R, complying with table 1, unless otherwise specified in the referring standard.

Set up the test piece on the bending-gauge in conformance with both the following conditions:

a) the bending stresses shall be supported by the fittings;

b) the pipe shall be applied to the entire length of the bending-gauge so that, beyond the ends of the supported portion, two free pipe sections equal in length are available, each equivalent to about one-eighth of the free length.