SLOVENSKI STANDARD
SIST EN 1054:1997

01-februar-1997

Cevni sistemi iz polimernih materialov - Plastomerni cevni sistemi za odpadno vodo in kanalizacijo - Metoda za preskus zrakotesnosti spojev

Plastics piping systems - Thermoplastics piping systems for soil and waste discharge - Test method for airtightness of joints

Kunststoff-Rohrleitungssysteme - Rohrleitungssysteme aus Thermoplasten für Abwasserleitungen zum Ableiten von häuslichem Abwasser - Prüverfahren für die Dichtheit gegen Gas von Verbindungen

Systemes de canalisations en plastiques - Systemes de canalisations thermoplastiques pour évacuation des eaux-vannes et des eaux usées - Méthode d'essai de l'étanchéité a l'air des jonctions

Ta slovenski standard je istoveten z: **EN 1054:1995**

ICS:

23.040.20	Cevi iz polimernih materialov	Plastics pipes
91.140.80	Drenažni sistemi	Drainage systems

SIST EN 1054:1997 **en**

EUROPEAN STANDARD

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Descriptors: sanitation, water removal, sewage, buildings, interior, plastic tubes, thermoplastic resins, leak tests, gas permeability, verification

English version

Plastics piping systems - Thermoplastics piping systems for soil and waste discharge - Test method for airtightness of joints

Systèmes de canalisations en plastiques - Systèmes de canalisations thermoplastiques pour évacuation des eaux-vannes et des eaux usées - Méthode d'essai de l'étanchéité à l'air des jonctions

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This European Standard was approved by CEN on 1995-10-05. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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 European Standard was prepared by the Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems" of which the secretariat is held by NNI.

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 April 1996, and conflicting national standards shall be withdrawn at the latest by April 1996.

According to 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 and the United Kingdom.

This standard is based on annex C "Airtightness test" of ISO 3633:1991 "Unplasticized poly(vinyl chloride) (PVC-U) pipes and fittings for soil and waste discharge (low and high temperature) systems inside buildings - Specifications", published by the International Organization for Standardization (ISO). It is a modification of annex C 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 material is mentioned;
- test parameters, except those common to all plastics, are omitted;
- no diameter limit is included;
- no material-dependent requirements are given;
- editorial changes have been introduced.

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.

1 Scope

This standard specifies a method for testing the airtightness of joints of thermoplastics piping systems for soil and waste discharge inside buildings.

2 Principle

A test assembly of pipes and/or fittings is subjected to a given internal air pressure for a given period during which the leaktightness of the joint is verified by inspection.

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

a) the sampling procedure (see 4.1);

b) the number of test pieces (see 4.2).

3 Apparatus

3.1 End-sealing devices, having a size and using a sealing method both appropriate to the type of joint assembly under test. The devices shall be restrained in a manner that does not exert longitudinal forces on the joint assembly and that prevents the devices or the assembly under test from separating under pressure. The weight of the devices shall not be allowed to influence the angular deflections to be applied (see 5.8).

3.2 Air pressure source, connected via a shut-off valve to one end of at least one end-sealing device, and capable of maintaining the required pressure within ± 10 % (see clause 5).

3.3 Pressure measuring device, capable of checking conformity to the required test pressure (see 3.2 and clause 5).

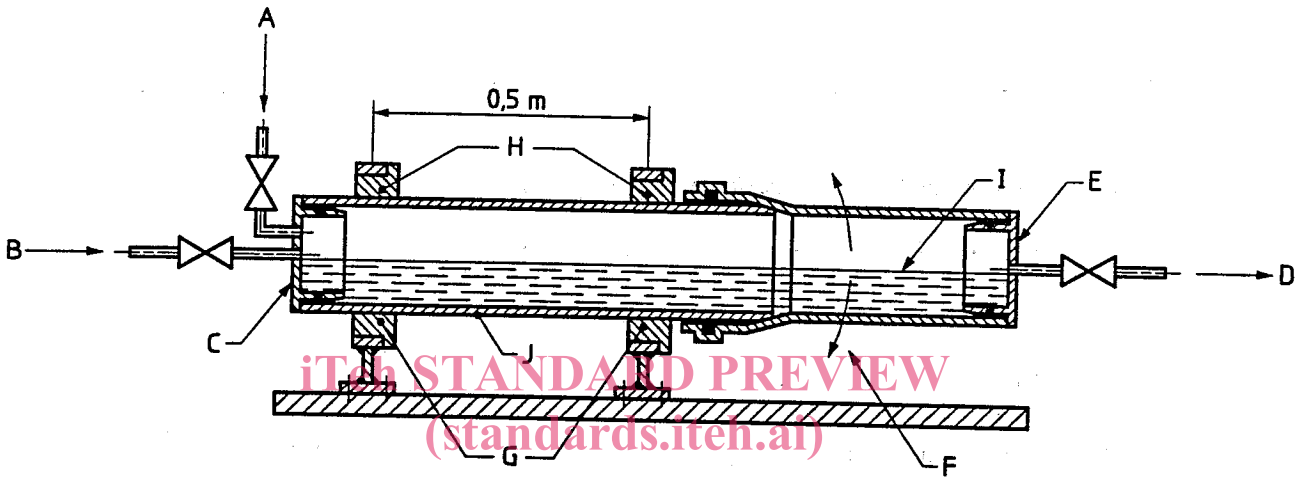
3.4 Water supply and outlet devices, each connected via a shut-off valve to at least one end-sealing device to admit water to the appropriate level within the test piece (see figure 1).

4 Test pieces

4.1 Preparation

The test piece shall comprise an assembly of (a) pipe section(s) (with or without sockets) and/or fitting(s), one part of the test piece being a pipe or a fitting with a spigot mounted in two clamped blocks (see figure 1).

Dimensions in metres



A	Air inlet
B	Water inlet
C	Sealing plug with water inlet, air inlet and end restraint
D	Water outlet
E	Sealing plug with water outlet and end restraint (see 3.1)
F	Direction of movement for angular deflection, if applicable (see 5.8)
G	Loose bushes to allow all sizes of pipes to be accommodated on the same test fixture
H	Fixed points
I	Level of water for test (half of pipe internal bore)
J	Fixed component

Figure 1: Typical arrangement

One end of the pipe shall be sealed with a plug that has a combined water and air inlet. A fitting or a joint shall be assembled with the open end of the fixed component. The fitting or joint shall then be sealed at all open ends with plugs, one of which has a centrally mounted water outlet and shut-off valve (see figure 2).

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

The assembly shall comprise the combination of the smallest available spigot end and the largest available socket or socket groove diameter within the applicable tolerance(s) and obtained by sampling in accordance with the referring standard.

The relevant diameters of the selected spigot(s) and socket(s) shall be measured and recorded.

4.2 Number

The number of test pieces shall be as specified in the referring standard.

5 Procedure

5.1 Carry out the following procedure at ambient temperatures of (23 ± 5) °C using cold tap water.

5.2 Mount the test piece horizontally in the apparatus (see figure 1).

5.3 When testing in accordance with 5.4 to 5.8 monitor the joint for and record any leaks which are evident by the formation of bubbles of soap solution (see 5.4) and/or the escape of water.

5.4 Apply a solution of soapy water or equivalent leak-detecting agent around the annular space between the spigot and the mouth of the socket. Afterwards remove any excess, dripping liquid with a dry cloth.

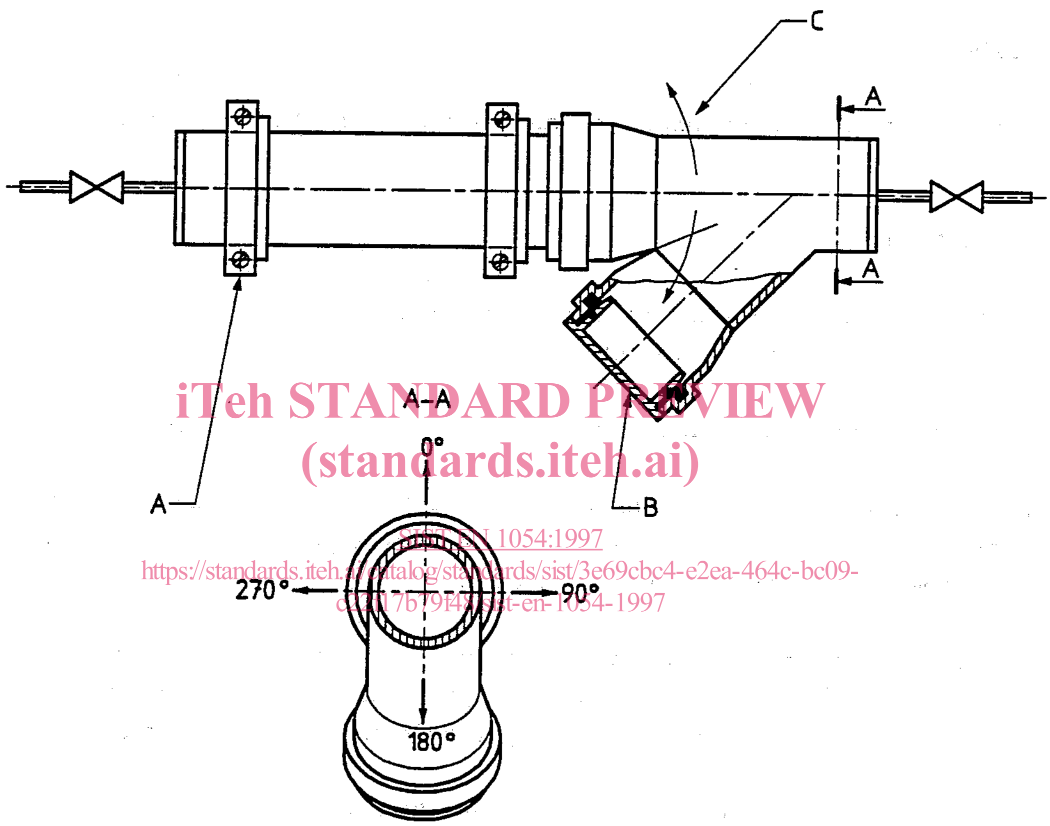
5.5 Open the water outlet valve and close the air inlet valve.

5.6 Open the water inlet valve. When the assembly is half-full, as indicated by water flow from the outlet, close first the water inlet valve(s) and then the water outlet valve(s).

5.7 Open the air inlet valve and increase the internal air pressure to (0,1 ± 0,01) bar [(10 ± 1) kPa] using air at the ambient temperature (see 5.1).

5.8 Maintain this pressure for 5 min, then deflect the fitting or joint manually on the spigot end of the clamped component, until their consecutive axes reach the maximum angular deflection, as declared by the manufacturer for the joint under test. Apply this angular deflection at 0°, 90°, 180° and 270° (see figure 2), maintaining it for 1 min in each of these directions.

5.9 Depressurize, drain and dismantle the test piece. Inspect for and record any changes in the appearance of the components tested.



End elevation (indicating directions of deflection during the test)

A Blocks split and held together with wing-nut

B Sealing plug

C Directions of movement of fitting during test

Figure 2: Directions of deflection