SLOVENSKI STANDARD

SIST EN 12295:2000

01-junij-2000

Cevni sistemi iz polimernih materialov - Plastomerne cevi in fitingi za hladno in toplo vodo - Preskusna metoda za ugotavljanje odpornosti spojev proti cikliļ nim spremembam tlaka

Plastics piping systems - Thermoplastics pipes and associated fittings for hot and cold water - Test method for resistance of joints to pressure cycling

Kunstoff - Rohrleitungssysteme - Rohre aus Thermoplasten und zugehörige Formstücke für Warm- und Kaltwasser - Prüfverfahren für die Beständigkeit von Verbindungen gegen Druckwechselbeanspruchung

Systemes de canalisations en plastique - Tubes thermoplastiques et raccords associés pour installation d'eau chaude et froide sous pression - Méthode d'essai de résistance des asseemblages a des cycles de pression

Ta slovenski standard je istoveten z: **EN 12295:1999**

ICS:

23.040.20	Cevi iz polimernih materialov	Plastics pipes
23.040.45	Fitingi iz polimernih materialov	Plastics fittings

SIST EN 12295:2000 **en**

EUROPEAN STANDARD
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English version

Plastics piping systems - Thermoplastics pipes and associated fittings for hot and cold water - Test method for resistance of joints to pressure cycling

Systèmes de canalisations en plastique - Tubes thermoplastiques et raccords associés pour installation d'eau chaude et froide sous pression - Méthode d'essai de résistance des assemblages à des cycles de pression

Kunststoff-Rohrleitungssysteme - Rohre aus Thermoplasten und zugehörige Formstücke für Warm- und Kaltwasser - Prüfverfahren für die Beständigkeit von Verbindungen gegen Druckwechselbeanspruchung

This European Standard was approved by CEN on 13 December 1998.

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.

This European Standard exists 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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN 12295:1999 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which 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 December 1999, and conflicting national standards shall be withdrawn at the latest by March 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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

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 resistance of joints to pressure cycling. It is applicable to piping systems based on rigid or flexible thermoplastics pipes intended to be used in hot and cold water applications.

2 Principle

An assembly of pipes and fittings is subjected to pressure cycling in air or water between two positive pressure limits via water while being maintained at a specified temperature and inspected for leakage.

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

a) the test temperature (see 3.3 and 5.2);
b) the number of test pieces (see 4.2);
c) the test pressure limits (see 6.1);
d) the duration of one cycle (see 6.1);
e) the number of cycles (see 6.2).

3 Apparatus

3.1 Pressurizing device, capable of applying and regulating the water pressure in the test piece to a sinusoidal form between pressure limits as specified in the referring standard.

NOTE: It may be necessary to compensate for any differences between the pressure at the position of the test piece and the pressure indicated at any other measuring point.

3.2 Pressure measurement device, capable of measuring the water pressure in the test piece with an accuracy of ± 5 %. The device measurement shall be capable of producing a record of the sinusoidal wave form.

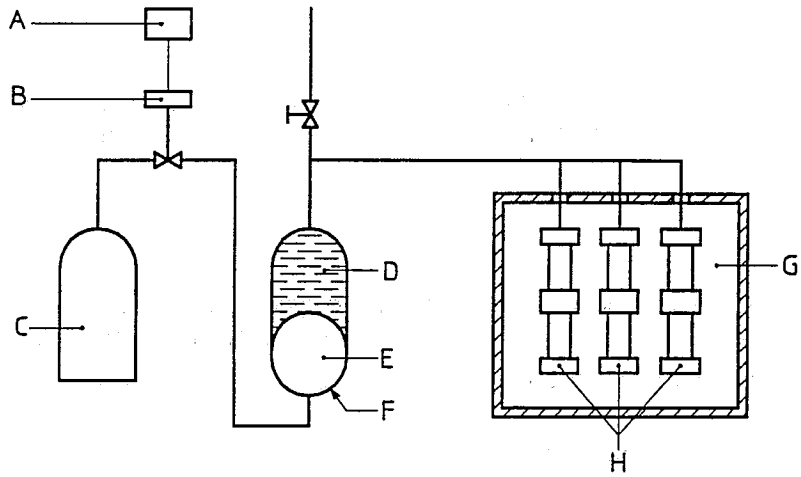
NOTE: It may be necessary to compensate for any differences between the pressure at the position of the test piece and the pressure indicated at any other measuring point.

3.3 Test chamber, capable of maintaining the specified test temperature within ± 1 K, unless testing in the range (23 ± 5) °C, in which case the permitted deviations shall be ± 2 K.

3.4 Thermometer(s), capable of checking conformity to the specified test temperature (see 3.3).

3.5 End-sealing device, of appropriate size and sealing method for sealing the non-jointed end of the test piece. The device shall be restrained in a manner that does not exert longitudinal forces on the joints.

3.6 A typical test arrangement is shown in Figure 1.



A Electric control
B Valve
C Compressed air cylinder
D Water
E Air
F Pressure converter
G Temperature controlled test chamber
H Test assemblies

Figure 1 — Schematic test arrangement

4 Test pieces

4.1 Preparation

The test piece shall comprise an assembly of pipes and at least one fitting joined in accordance with the manufacturer's recommended practice.

The free length on each side of the fitting under test shall be not less than either $1{,}5d_n$ or 300 mm, whichever is the greater, where d_n is the nominal outside diameter of the pipe.

In order to include the required number of pipes and fitting(s), several test pieces may be tested simultaneously provided that the failure of one test piece does not affect the others under test.

4.2 Number

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

5 Conditioning

5.1 Prime each test piece with water so that all air is expelled.

5.2 Bring the test piece and water therein to the test temperature as specified in the referring standard.

5.3 Condition the test piece at the applicable test temperature given in Table 1 before or after connecting the test piece(s) to the pressurizing device. If subsequent connection is necessary, ensure that all air is again expelled and that the conditioning has been completed immediately before connection to the pressurizing device.

Table 1 — Conditioning periods

Pipe wall thickness *e* mm	Conditioning period
$e < 3$	1 h ± 5 min
$3 \leq e < 8$	3 h ± 15 min
$8 \leq e < 16$	6 h ± 30 min
$16 \leq e < 32$	10 h ± 1 h

6 Procedure

6.1 As specified in the referring standard, apply alternately to the test piece the two internal pressures and maintain the cycle frequency and test temperatures accordingly.

6.2 During and on completion of the number of cycles specified by the referring standard, inspect all joints for any sign of leakage, and record the wave form at regular intervals.

6.3 If leakage occurs prior to completion of the number of cycles specified by the referring standard, record the number of elapsed cycles and the position and nature of the leak.

7 Test report

The test report shall include the following information:

a) a reference to this standard and to the referring standard;

b) the identification and the number of the components under test, including their operating pressure;

c) the test temperature;

d) the test pressures comprising the lowest and the highest of the cycle;

e) the duration of one cycle;

f) the number of cycles;

g) a record of the wave form at the start and the end of each test;

h) the signs of leakage, if any, and where and when they occurred;

i) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;

j) the date of test.