BRITISH STANDARD

BS EN 12294:2000
BS 2782-11:Method 1123V:2000

Plastics piping systems — Systems for hot and cold water — Test method for leaktightness under vacuum

The European Standard EN 12294:1999 has the status of a British Standard

ICS 23.040.01

National foreword

This British Standard is the official English language version of EN 12294:1999.

The UK participation in its preparation was entrusted to Technical Committee PRI/61, Plastics piping systems and components, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 4, an inside back cover and a back cover.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12294

September 1999

ICS 23.040.20

English version

Plastics piping systems - Systems for hot and cold water - Test method for leaktightness under vacuum

Systèmes de canalisations en plastique - Systèmes pour installation d'eau chaude et froide sous pression - Méthode d'essai de l'étanchéité sous vide

Kunststoff-Rohrleitungssysteme - Systeme für Warm- und Kaltwasser - Prüfverfahren der Vakuumdichtheit

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Ref. No. EN 12294:1999 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of an identical text or by endorsement, at the latest by December 1999, and conflicting national standards shall be withdrawn at the latest by March 2000.

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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 leaktightness under vacuum of joints for thermoplastics piping systems.

It is applicable to piping systems based on thermoplastics pipes intended to be used in hot and cold water pressure applications.

2 Principle

An assembly of pipes and fittings is subjected to partial vacuum for a specific period during which the joints are inspected for airtightness.

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

a) the number of test pieces (see 4.2);
b) the test pressure (see 6.2);
c) the duration of test (see 6.3);
d) the pressure increase which indicates a failure (see 6.3).

3 Apparatus

3.1 Vacuum source (pump), capable of producing in the test piece the partial vacuum specified in the referring standard.

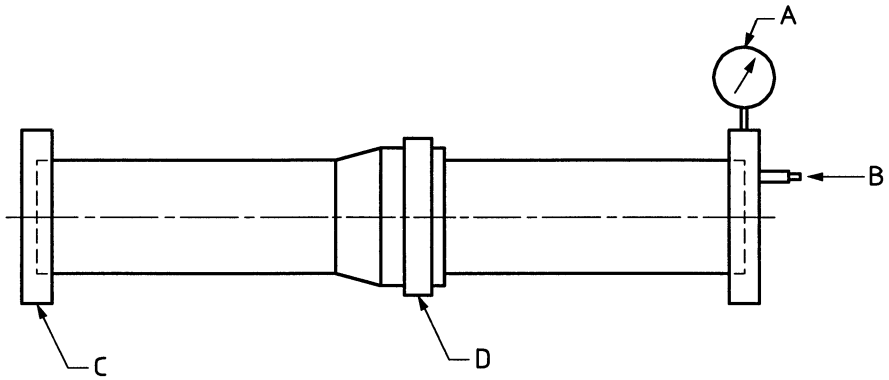
3.2 Vacuum pressure measurement device, capable of measuring the pressure in the test piece with an accuracy of ±0,01 bar[1)].

3.3 Shut-off valve, to isolate the test piece from the vacuum source (3.1).

3.4 Thermometer(s), capable of checking conformity to the specified test temperature (see 6.1).

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 Gauge
B To vacuum pump
C End seal
D Joint under test

Figure 1 — Typical test arrangement

1) 1 bar = 10^5 N/m^2 = 100 kPa

4 Test pieces

4.1 Preparation

The test piece shall comprise an assembly of pipes and/or fittings joined in accordance with the manufacturer's recommended practice.

The test piece shall be connected to the vacuum source (pump) via a line with a shut-off valve. The vacuum pressure measurement device shall be connected between the shut-off valve and the test piece.

4.2 Number

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

5 Conditioning

Condition the test piece at (23 ± 5) °C for at least 2 h.

6 Procedure

6.1 Ensure that during this procedure the test temperature is maintained in the range (23 ± 5) °C and that variations in the test temperature do not exceed ±2 °C.

6.2 Evacuate the test piece to the test pressure specified in the referring standard. Record the time when the test pressure is achieved and close the shut-off valve.

6.3 Record the increase of pressure, if any, in the test piece until either the test period specified in the referring standard has elapsed or prior failure of the test piece as indicated be an increase of internal pressure [see d) of the note to clause 2].

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 duration;

e) the test pressure and, if any, the pressure increase;

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

g) the date of test.

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