BRITISH STANDARD

BS EN
12095 : 1997
BS 2782 :
Part 11 :
Method 1111Q :
1997

Plastics piping systems — Brackets for rainwater piping systems — Test method for bracket strength

The European Standard EN 12095 : 1997 has the status of a British Standard

ICS 21.060.70; 91.060.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PRI/61, Plastics piping systems and components, upon which the following bodies were represented:

British Gas plc
British Plastics Federation
British Plumbing Fittings Manufacturers' Association
British Valve and Actuator Manufacturers' Association
Chartered Institution of Water and Environment Management
Department of the Environment (British Board of Agrément)
Department of the Environment (Building Research Establishment)
Department of Transport
Electricity Association
Health and Safety Executive
Institute of Building Control
Institute of Materials
Institution of Civil Engineers
Institution of Gas Engineers
National Association of Plumbing, Heating and Mechanical Services Contractors
Pipeline Industries Guild
Plastics Land Drainage Manufacturers' Association
Society of British Gas Industries
Society of British Water Industries
Water Companies Association
Water Services Association of England and Wales

The following bodies were also represented in the drafting of this standard, through subcomittees and panels:

British Adhesives and Sealants Association
ERA Technology Ltd.
Engineering Equipment and Materials Users' Association
RAPRA Technology Ltd.

This British Standard, having been prepared under the direction of the Sector Board for Materials and Chemicals, was published under the authority of the Standards Board and comes into effect on
15 June 1997

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference PRI/61
Draft for comment 95/125471 DC

ISBN 0 580 27475 6

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National foreword

This British Standard has been prepared by Technical Committee PRI/61, and is the English language version of EN 12095 : 1997 *Plastics piping systems — Brackets for rainwater piping systems — Test method for bracket strength*, published by the European Committee for Standardization (CEN).

It is incorporated into BS 2782 *Methods of testing plastics : Part 11: Thermoplastics pipes, fittings and valves*, as Method 1111Q : 1997, for association with related test methods for plastics materials and plastics piping components.

This test method has been prepared for reference by other standards under preparation by CEN for specification of plastics piping and ducting systems and components. It has been implemented to enable experience of the method to be gained and for use in other fresh applications.

It is also for use for the revision or amendment of other national standards as practicable, but it should not be presumed to apply to any existing standard or specification until that standard/specification has been amended or revised to make reference to this method and adjust any requirements as appropriate.

This British Standard is published under the direction of the Sector Board for Materials and Chemicals whose Technical Committee PRI/61 has the responsibility to:

– aid enquirers to understand the text;
– present to the responsible international/European committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
– monitor related international and European developments and promulgate them in the UK.

NOTE. International and European Standards, as well as overseas standards, are available from Customer Services, BSI, 389 Chiswick High Road, London W4 4AL.

Warning note. This British Standard, which is identical with EN 12095 : 1997, does not necessarily detail all the precautions necessary to meet the requirements of the Health and Safety at Work, etc. Act 1974. Attention should be paid to any appropriate safety precautions and the method should be operated only by trained personnel.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

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

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12095

February 1997

ICS 21.060.70; 23.040.90; 91.140.80

Descriptors: Plastic tubes, rainwater pipes, fastenings, pipe clips, metals, plastics, tests, mechanical strength, measurements, deformation

English version

Plastics piping systems — Brackets for rainwater piping systems — Test method for bracket strength

Systèmes de canalisation en plastique — Colliers pour systèmes de descente pluviale — Méthode d'essai pour la résistance du collier

Kunststoff-Rohrleitungssysteme — Schellen für Regenwasser-Rohrleitungssysteme — Prüfverfahren der Schellen-Festigkeit

This European Standard was approved by CEN on 1996-12-27. 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-tp-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

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 August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This European Standard has been prepared in liasion with CEN/TC 128, Roof covering products for discontinuous laying.

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.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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.

1 Scope

This standard specifies a method for testing the strength of fixing brackets intended to support plastics rainwater downpipe systems used externally on buildings.

It is applicable to both metal and plastics brackets, and determines the amount of residual deformation after removal of a specified test load.

2 Principle

A fixing bracket is fitted in accordance with the manufacturer's instructions to a vertical supporting surface in such a manner that it acts as an anchor bracket for vertical pipework. A coaxial vertical load is applied and the residual deflection recorded after removal of the load.

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

a) the test load (see **3.3** and **6.3**);

b) the number of test pieces (see **4.2**);

c) conditioning requirements, if other than 16 h at (23 ± 5) °C (see clause **5**).

3 Apparatus

3.1 A rainwater downpipe socket, with a $500\ ^{+10}_{0}$ mm length of the same sized pipe, which can be inserted into the socket.

3.2 An intermediate guide bracket, sized to accept the pipe (**3.1**) and allow it to move longitudinally.

3.3 A means of applying the required test load (see **6.3**) to the socket (**3.1**) when the socket is supported by the bracket under test.

3.4 A vertical wall or frame, capable of supporting the test apparatus and load (see clause **6** and figure 1).

3.5 Means for measuring the residual vertical deformation relative to a horizontal datum plane (see **6.4**), to ± 0,5 mm (see figures 1 and 2).

4 Test pieces

4.1 The test piece shall consist of a bracket fitted to the socket (**3.1**) in such a way that the bracket acts as an anchor preventing any relative downward movement of the socket.

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

5 Conditioning

Unless otherwise specified in the referring standard, the test piece shall be conditioned for at least 16 h at (23 ± 5) °C immediately prior to testing in accordance with clause **6**.

6 Procedure

6.1 Conduct the following procedures in an ambient temperature of (23 ± 5) °C.

6.2 Fix the test piece to a vertical supporting wall or frame, in accordance with the manufacturer's instructions. Fit the socket (**3.1**) to the test piece bracket in such a way that the bracket acts as an anchor fully supporting the socket with the socket axis vertical (see figure 1). Fit the pipe (**3.1**) into the socket and attach the intermediate bracket (**3.2**) to the pipe and supporting wall 400 mm above the socket. Determine the location of position 1 (H_1) (see figures 1 and 2).

6.3 Apply the test load specified in the referring standard to the socket so that the load produces the appropriate coaxial downward force on the socket for a period of (30 ± 5) min and then remove the load.

6.4 24 h after removal of the load, measure and record the residual vertical deformation as the distance, h_r, between the position 1 and position 2 shown in figure 2, using the set square or equivalent (**3.5**) as the datum plane.

7 Test report

The test report shall include the following information:

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

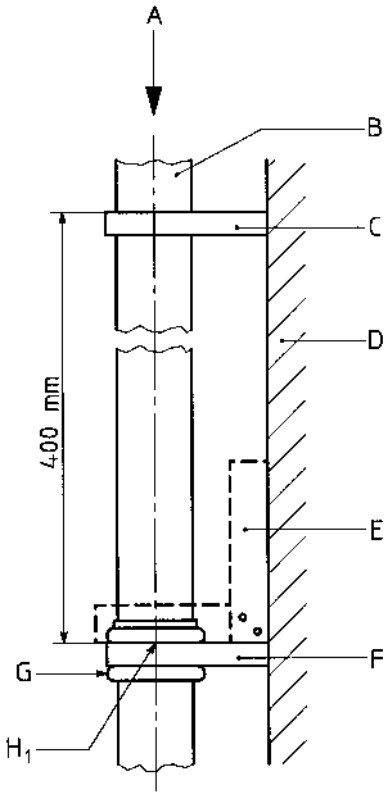
b) complete identification of the bracket, including material, size, type and batch from which the bracket was taken;

c) the load applied;

d) the residual vertical deformation, h_r, in millimetres;

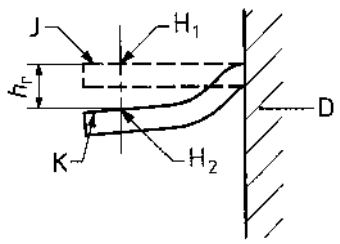
e) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;

f) the date of test.



A Load
B Pipe
C Guide bracket (**3.2**)
D Vertical wall or frame
E Engineers set square or equivalent
F Pipe bracket under test
G Socket (**3.1**)
H_1 Position 1

Figure 1. Typical arrangement



D Vertical wall or frame
H_1 Position 1
H_2 Position 2 (on pipe centreline) after unloading
h_r Residual deformation
J Top of bracket before unloading
K Top of bracket after unloading

Figure 2. Residual deformation of the bracket

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