

Vitrified clay pipes and fittings and pipe joints for drains and sewers —

Part 3: Test methods

The European Standard EN 295-3:1991 with the incorporation of its amendment A1:1998 has the status of a British Standard

ICS 23.040.50; 91.100.25; 93.030

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This British Standard was published under the authority of the Standards Board and comes into effect on 31 October 1991

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The following BSI references relate to the work on this standard:

Committee reference B/505
Draft for comment 90/10886

ISBN 0 580 20271 2

Amendments issued since publication

Amd. No.	Date	Comments
10357	February 1999	Indicated by a sideline in the margin

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National foreword

This Part of BS EN 295, which has been prepared under the direction of the Technical Committee for Waste Water Engineering, B/505, is the English language version of EN 295-3 *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 3: Test methods*, including amendment A1:1998, published by the European Committee for Standardization (CEN).

The European Standard was prepared by Working Group 2, Vitrified clay pipes, of Technical Committee CEN/TC 165 with the active participation and approval of the UK.

It specifies the methods of test to be used to verify product compliance with the requirements specified in BS EN 295-1:1991.

More test methods are included in this standard than in BS 65:1988 as this standard covers the expanded requirements in BS EN 295-1:1991.

Cross-references. Where there are British Standards either identical or technically equivalent to the European Standards or international standards quoted in this standard the relationship is given in National appendix NB.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 24 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Descriptors: Vitrified clay pipes, fittings, joints, test methods.

English version

Vitrified clay pipes and fittings and pipe joints for drains and sewers Part 3: Test methods

(includes amendment A1:1998)

Tuyaux et accessoires en grès et
assemblages de tuyaux pour les réseaux
de branchement et d'assainissement —
Partie 3: Méthode d'essai
(inclut l'amendement A1:1998)

Steinzeugrohre und Formstücke
sowie Rohrverbindungen für
Abwasserleitungen und — kanäle —
Teil 3: Prüfverfahren
(enthält Änderung A1:1998)

This European Standard was approved by CEN members on 16th October 1991 and amendment A1 was approved on 17 May 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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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This part of the European Standard for vitrified clay pipes is the third of three parts which were drafted by WG2 “*Vitrified clay pipes*” of the Technical Committee CEN/TC 165 “*Waste water engineering*”, Secretariat of which is held by DIN.

“*Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 1: Requirements*” contains the complete specification, “*Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 2: Quality control and Sampling*” contains the complete quality control. Other parts may be added later.

On drafting this standard the provisional results already available of CEN/TC 165/WG1 “*General requirements on pipes, fittings, pipe joints including sealings and manholes*” or other relevant working group of TC 165 were taken into account. When further results are received, any necessary amendment will be made.

In accordance with the Common CEN/CENELEC Rules, 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 United Kingdom.

Vitrified clay pipes in permanent or in temporary contact with water intended for human consumption will not affect the quality of that water. Therefore this standard does not contravene the EC-Council Directives 75/440, 79/869, 80/778.

This standard takes into account the essential requirements of the EC-Council Directive for construction products (89/106) and the Draft Directive on the treatment of municipal waste water (COM (89) 518).

Foreword to amendment A1

This amendment EN 295-3:1991/A1:1998 to EN 295-3:1991 has been prepared by Technical Committee CEN/TC 165, Waste water engineering, the Secretariat of which is held by DIN.

This amendment to the European Standard EN 295-3:1991 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

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.

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1 General

1.1 Object and field of application

This part of this European Standard is the specification for the methods of test for requirements of EN 295-1.

NOTE Where reference is made to clauses in EN 295-1 it is clearly stated.

Throughout the clauses in this standard reference to pipes includes pipe sections as defined in clause 1.3.8 of EN 295-1 where these are suitable and permitted for the tests.

1.2 References

EN 295-1:1991, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 1: Specification*.

EN 10002-1:1990, *Metallic materials — Tensile testing — Part 1: Method of test (at ambient temperature)*.

ISO 37:1977, *Rubber, vulcanised — Determination of tensile stress-strain properties*.

ISO 527-2:1995, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*.

ISO 815:1972, *Vulcanized rubbers — Determination of compression set under constant deflection at normal and high temperatures*.

ISO 868:1985, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*.

ISO 1133:1991, *Plastics — Determination of melt mass flow rate (MFR) and the melt volume flow rate (MVR) of thermoplastics*.

ISO 1431-1:1989, *Rubber, vulcanised or thermoplastic — Resistance to ozone cracking — Part 1: Static strain test*.

ISO 4648:1978, *Rubber, vulcanised — Determination of dimensions of test pieces and products for test purposes*.

1.3 Symbols

A	Outside diameter of spigot moulding, in millimetres (invert conformity test).	a_p	Width of pressure beam, in millimetres (crushing strength test and bending tensile strength test).
A_L	Minimum overall length of sample, in millimetres (tensile strength and elongation at break — polypropylene sleeve couplings).	a_{sp}	Measurement from inside of pipe barrel to outside of spigot moulding, in millimetres (invert conformity test).
a	Lever arm length, in metres (bending moment resistance test).	B	Nominal length of external barrel of pipe unobstructed by socket shape and/or jointing configuration, in millimetres (crushing strength test).
a_M	Measurement from inside of pipe barrel to mid point of inside of socket fairing, in millimetres (invert conformity test).	B_e	Width at ends, in millimetres (tensile strength and elongation at break — polypropylene sleeve couplings).
		B_t	Distance from the outside surface of the spigot moulding to the internal bore of the pipe at one point at which the outside diameter of the spigot moulding (A) was measured, in millimetres (invert conformity test).
		b	Specimen width, in millimetres (fatigue strength test).
		b_3	Specimen width, in millimetres (bending tensile strength test).
		C	Length of narrow parallel portion of sample, in millimetres (tensile strength and elongation at break for polypropylene sleeve couplings).
		CR	Resistance index for jointing material.
		C_t	Distance from the outside surface of the spigot moulding to the internal bore of the pipe at the opposite end to B_t of the diameter measured as the outside diameter of the spigot (A), in millimetres (invert conformity test).
		C_1	Distance between seal and load application line for F_z , in metres (shear resistance test).
		C_2	Distance between right hand support and load line for F_E , in metres (shear resistance test).
		c	Concentration of solution, in moles per litre (chemical resistance tests).
		c_i	Factor for the upper (0,4) or lower (0,1) limit of the load (fatigue strength test).
		D	Inside diameter of socket moulding, in millimetres (invert conformity test).
		DN	Nominal size — a numerical designation of size which is a convenient round number equal to or approximately equal to the bore, in millimetres (bending moment resistance test).
		D_s	Deviation from straightness of a pipe barrel, in millimetres (straightness test).