

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

Part 10: Performance requirements

The European Standard EN 295-10:2005 has the status of a British Standard

ICS 23.040.50

National foreword

This British Standard is the official English language version of EN 295-10:2005.

The UK participation in its preparation was entrusted to Technical Committee B/505, Wastewater engineering, which has the responsibility to:

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

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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, the EN title page, pages 2 to 18, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 29 September 2005

© BSI 29 September 2005

ISBN 0 580 46563 2

Amendments issued since publication

Amd. No.	Date	Comments

English version

Vitrified clay pipes and fittings and pipe joints for drains and sewers - Part 10: Performance requirements

Tuyaux et accessoires en grès et assemblages de tuyaux
pour les réseaux de branchement et d'assainissement -
Partie 10 : Exigences de performance

Steinzeugrohre und Formstücke sowie Rohrverbindungen
für Abwasserleitungen und -kanäle - Teil 10:
Leistungsanforderungen

This European Standard was approved by CEN on 17 January 2005.

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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Requirements	5
4.1 General.....	5
4.2 Vitrified clay pipes and fittings and their joints.....	5
4.2.1 Materials	5
4.2.2 Dimensional tolerances	5
4.2.3 Strength	5
4.2.4 Gas- and liquid-tightness of pipes, fittings and their joints.....	5
4.2.5 Durability	6
4.3 Special fittings, adaptors and compatible accessories.....	6
4.3.1 Materials	6
4.3.2 Dimensional tolerances	6
4.3.3 Strength	6
4.3.4 Gas- and liquid-tightness.....	6
4.3.5 Durability	6
4.4 Perforated vitrified clay pipes	6
4.4.1 Materials	6
4.4.2 Dimensional tolerances	6
4.4.3 Strength	7
4.4.4 Durability	7
4.5 Vitrified clay manholes.....	7
4.5.1 Materials	7
4.5.2 Dimensional tolerance	7
4.5.3 Strength	7
4.5.4 Liquid-tightness	7
4.5.5 Durability	7
4.6 Vitrified clay pipes and joints for pipe jacking	7
4.6.1 Materials	7
4.6.2 Dimensional tolerances	7
4.6.3 Strength	7
4.6.4 Liquid-tightness	8
4.6.5 Durability	8
5 Evaluation of conformity.....	8
5.1 General.....	8
5.2 Type testing (initial testing of the product).....	8
5.3 Factory production control (FPC)	9
5.3.1 General.....	9
5.3.2 Equipment	9
5.3.3 Product testing and evaluation	9
6 Marking	11
Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive.....	13

Foreword

This document (EN 295-10:2005) has been prepared by Technical Committee CEN/TC 165 “Waste water engineering”, the secretariat of which is held by DIN.

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 2005, and conflicting national standards shall be withdrawn at the latest by December 2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document contains only the performance requirements needed to meet the requirements of EU Directive(s). It does not indicate the quality of products. This is specified in the standards series EN 295 for vitrified clay pipes, fittings and pipe joints for drains and sewers, which consists of the following Parts:

- Part 1: Requirements,
- Part 2: Quality control,
- Part 3: Test methods,
- Part 4: Requirements for special fittings, adaptors and compatible accessories,
- Part 5: Requirements for perforated vitrified clay pipes and fittings,
- Part 6: Requirements for vitrified clay manholes,
- Part 7: Requirements for vitrified clay pipes and joints for pipe jacking.

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

1 Scope

This document specifies performance requirements for:

- vitrified clay pipes, fittings and pipe joints as defined in EN 295-1,
- special fittings, adaptors and compatible accessories as defined in EN 295-4,
- perforated vitrified clay pipes and fittings as defined in EN 295-5,
- vitrified clay manholes as defined in EN 295-6,
- vitrified clay pipes and joints for pipe jacking as defined in EN 295-7,

for buried drain or sewer systems for the conveyance of sewage and surface water (including rain water) under gravity or occasionally at low head of pressure. It specifies the evaluation of conformity for the performance requirements of products according to this document.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

EN 295-2:1991, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 2: Quality control*

EN 295-3:1991, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 3: Test methods*.

EN 295-4:1995, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 4: Requirements for special fittings, adaptors and compatible accessories*.

EN 295-5:1994, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 5: Requirements for perforated vitrified clay pipes and fittings*.

EN 295-6:1995, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 6: Requirements for vitrified clay manholes*.

EN 295-7:1995, *Vitrified clay pipes and fittings and pipe joints for drains and sewers — Part 7: Requirements for vitrified clay pipes and joints for pipe jacking*.

EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2000)*.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 295-1 to EN 295-7 apply.

4 Requirements

4.1 General

Products according to this document (EN 295-10) shall be designed so as to protect people and the immediate environment against pollutants transported in waste water disposal systems. This is ensured by the products meeting the technical requirements of EN 295-1 to -7.

All requirements specified in this clause are to be tested according to the test methods referred to in the appropriate clause of the relevant part of EN 295.

4.2 Vitrified clay pipes and fittings and their joints

4.2.1 Materials

The material for pipes and fittings shall conform to EN 295-1:1991, 2.1.

The materials for joints shall conform to EN 295-1:1991, 3.1.

4.2.2 Dimensional tolerances

The minimum permissible bore shall be in accordance with EN 295-1:1991, 2.2.

The tolerance of the nominal length of a pipe shall be in accordance with EN 295-1:1991, 2.3.

The deviation from straightness of a pipe shall be in accordance with EN 295-1:1991, 2.5.

The squareness of the ends of pipes and fitting shall be in accordance with EN 295-1:1991, 2.4.

The tolerances on curvature of bends shall be in accordance with EN 295-1:1991, 2.7.

The tolerance of branches shall be in accordance with EN 295-1:1991, 2.8.

The dimensional tolerances of joint assemblies shall be in accordance with EN 295-1:1991, 3.5, when tested according to EN 295-3:1991, Clause 19 and shall be in accordance with EN 295-1:1991, 3.6.

4.2.3 Strength

The crushing strength (FN) of pipes and pipe sections shall not be less than given in EN 295-1:1991, 2.9 or 2.10.

The bond strength for fixed fired vitrified clay parts shall be in accordance with EN 295-1:1991, 2.12.

Vitrified clay pipes and fittings are resistant to fatigue load according to EN 295-1:1991, 2.13. Where required, the fatigue strength shall be proved by testing in accordance with EN 295-3:1991, Clause 8.

The bending moment resistance of pipes shall be in accordance with EN 295-1:1991, 2.11.

4.2.4 Gas- and liquid-tightness of pipes, fittings and their joints

Pipes and fittings shall be water-tight in accordance with EN 295-1:1991, 2.14.

Pipes, fittings and pipe sections shall be gas tight in accordance with EN 295-1:1991, 2.18.

Trapped fittings for drainage systems outside buildings and for sewers shall have a minimum water seal depth of 50 mm.

Assembled joints shall be water-tight in accordance with EN 295-1:1991, 3.2, 3.3 and 3.4.