3:500

Klaasja kihiga kaetud keraamilised torud ja liitmikud ning toruühendused dreenide ja kanalisatsioonitorustike jaoks. Osa 1: Nõuded

Vitrified clay pipes and fittings and pipe joints for drains and sewers - Part 1: Requirements

nen. Verien on one of the official of the offi



EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

tenerote

| Käesolev Eesti standard EVS-EN 295-1:1999 sisaldab Euroopa standardi EN 295- 1:1991+AC:1994 ingliskeelset teksti. Standard on kinnitatud Eesti Standardikeskuse 23.11.1999 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | This Estonian standard EVS-EN 295-1:1999 consists of the English text of the European standard EN 295-1:1991+AC:1994. This standard is ratified with the order of Estonian Centre for Standardisation dated 23.11.1999 and is endorsed with the notification published in the official bulletin of the Estonian | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| | national standardisation organisation. | | |
| Standard on kättesaadav Eesti standardiorganisatsioonist. | The standard is available from Estonian standardisation organisation. | | |
| | | | |
| | | | |
| ICS 23.040.50, 93.030 | | | |

dreenid ja kanalisatsioonitorustik, klaasja kihiga kaetud keraamilised torud, nõuded

Standardite reprodutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega: Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation: Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: 605 5050; E-mail: info@evs.ee

EUROPEAN STANDARD

NORME EUROPEENNE

EUROPAISCHE NORM

October 1991

UDC 621.643.2.06-033.64:628.2:620.1

Descriptors : Water pipelines, sewage, pipes, tubes, pipe fittings, sandstone products, specifications, joining, dimensions, dimensional tolerances, marking

English version

Vitrified clay pipes and fittings and pipe joints for drains and sewers - Part 1: Requirements

Tuyaux et accessoires en grès et assemblages de tuyaux pour les réseaux de branchement et d'assainissement - und -kanäle - Teil 1: Anforderungen Partie 1: Exigences

Steinzeugrohre und Formstücke sowie Rohrverbindungen für Abwasserleitungen

This European Standard was approved by CEN on 1991-10-02 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

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

(c) CEN 1991 Copyright reserved to all CEN members

Ref. No. EN 295-1:1991 E

Contents

Page

| | 3 | |
|---------|----------------------------------------|--------|
| | 5 | |
| | 0 | |
| | | |
| | C | |
| Cont | ents | |
| | 2 | Pag |
| 1 | General | 4 |
| 1.1 | Object and field of application | 4 |
| 1.2 | References | 4 |
| 1.3 | | 4 |
| | Nominal size | 4 |
| | Curvature | 4 |
| | Joint assembly | 4 |
| | Bearing elements | 4 |
| | Sealing elements Fairings | 4 |
| | Minimum bore | 4 4 |
| | Pipe Section | 4 |
| | Nominal Length | 4 |
| 2 | Pipes and fittings | 4 |
| 2.1 | Materials and manufacture | 4 |
| 2.2 | Minimum bore | 5 |
| 2.3 | Length | 5 |
| 2.4 | Squareness of ends | 5 |
| 2.5 | Deviation from straightness | 5 |
| 2.6 | Water seal of fittings | 6 |
| 2.7 | Angle of curvature and radius of bends | 6 |
| 2.8 | Branch angle of junctions | 6 |
| 2.9 | Crushing strength (FN) | 6 |
| 2.10 | Bending tensile strength | 6 |
| 2.11 | Bending moment resistance (BMR) | 7 |
| 2.12 | Bond strength of adhesive used for | |
| • • • • | fixing fired clay parts together | 7 |
| | Minimum bending tensile strength | 7 7 |
| | Minimum strength after immersion | 7 |
| 2.13 | Fatigue strength under pulsating | - |
| 2.14 | load Watertightness of pipes | 7 7 |
| | merer Burness or hthes | ' |

| 2.15 | Chemical resistance | 7 |
|-------|----------------------------------|----|
| 2.15 | Hydraulic roughness | 7 |
| 2.10 | Abrasion resistance | 7 |
| | | 7 |
| 2.18 | Impermeability of fittings | 1 |
| 3 | Joint assemblies | 8 |
| 3.1 | Jointing materials | 8 |
| 3.1.1 | Rubber sealing elements | 8 |
| 3.1.2 | Polyurethane sealing elements | 8 |
| 3.1.3 | | |
| | - material requirements | 8 |
| 3.1.4 | Polypropylene sleeve couplings | |
| | - performance requirement | 8 |
| 3.1.5 | Other jointing materials | 8 |
| 3.2 | Watertightness of joints | 8 |
| 3.2.1 | Internal pressure | 8 |
| 3.2.2 | External pressure | 9 |
| 3.3 | Angular Deflection | 9 |
| 3.4 | Shear resistance | 9 |
| 3.5 | Invert conformity | 9 |
| 3.6 | Joint interchangeability | 9 |
| 3.7 | Chemical and physical resistance | |
| | to effluent | 11 |
| 3.7.1 | Joint assemblies | 11 |
| 3.7.2 | Jointing materials | 11 |
| 3.8 | Thermal cycling stability | 11 |
| 3.9 | Long-term thermal stability | 11 |
| 4 | Sampling for tests | 11 |
| 5 | Designation | 11 |
| 6 | Marking | 12 |
| 7 | Quality Assurance | 12 |

•--

Page

Page 3 EN 295-1:1991

Foreword

This part of the European Standard for vitrified clay pipes is the first of three parts which was 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 2: Quality control and sampling" contains the complete quality control. "Vitrified clay pipes and fittings and pipe joints for drains and sewers Part 3: Test methods" contains the necessary statements on the testing methods. 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 TC165 with general responsibilities were taken into account. When further results are received, any necessary amendments 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). 1. General

1.1 Object and field of application

This part of this European Standard specifies requirements for flexibly jointed vitrified clay pipes and fittings with or without sockets for the construction of drainage and sewerage systems. Although normally operated under gravity, the pipes and fittings covered by this Standard will accept periodic hydraulic surcharge.

If pipes are required to withstand continuous working under low pressure, the pressure used in tests in this standard shall be agreed between the manufacturer and the purchaser with a maximum test pressure of 600 kPa (6,0 bar).

The preferred dimensions for pipe lengths, curvature of bends and angles of junction arms are specified in this standard. Other values for these dimensions are acceptable providing the products meet all the relevant performance requirements and are marked correctly.

Fittings groups covered by this part of this standard are given in Table 2 of EN 295-2.

Where this standard provides for different strength classes, different systems of jointing dimensions, different lengths and different fittings, the specifiers/ purchasers may select according to their requirements.

- 1.2 References
- EN 295-2 1991 Vitrified clay pipes and fittings and pipe joints for drains and sewers : Part 2 : Quality control and sampling.
- EN 295-3 1991 Vitrified clay pipes and fittings and pipe joints for drains and sewers : Part 3 : Test methods.
- EN 29002 1987 Quality Systems Model for quality assurance in production and installation.
- ISO/DIS 4633 1986 Rubber seals Joint rings for water supply, drainage and sewerage pipelines - Specification for materials

1.3 Definitions

For the purposes of this European Standard the following definitions apply :

1.3.1 Nominal Size (DN). A numerical designation of size which is a convenient round number equal to or approximately equal to the bore in millimetres.

1.3.2 Curvature. The angle subtended by the length of a curved fitting at the centre of a circle of nominal radius through the centreline of the fitting.

1.3.3 Joint assembly. The adjacent ends of pipes, fittings or adaptors and the means of joining them.

1.3.4 Bearing elements : Spigots and sockets or couplings designed to include sealing elements with or without fairings.

1.3.5 Sealing elements : Factory made components which seal the joints, and are supplied by the pipe manufacturer.

1.3.6 Fairings : Any components located between bearing and sealing elements to reduce tolerances of sealing surfaces.

1.3.7 Minimum bore : smallest bore measured within 100 mm of the ends of the pipe.

1.3.8 Pipe section: A short length of pipe barrel equal to or greater than 300mm.

1.3.9 Nominal length: Numerical designation of length approximately equal to the internal length of the pipe barrel.

- 2. Pipes and fittings
- 2.1 Materials and manufacture

Pipes and fittings shall be made from suitable clays and fired to vitrification. The clays shall be of such a quality and homogeneity that the final product is in accordance with this standard. Pipes and fittings shall be sound and free from such defects as would impair their function when in service.