Plastics piping systems for renovation of underground nonpressure drainage and sewerage networks - Part 2: Lining with continuous pipes

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EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 13566-2:2006 sisaldab Euroopa standardi EN 13566-2:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 25.01.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 13566-2:2006 consists of the English text of the European standard EN 13566-2:2005. This document is endorsed on 25.01.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This Part 2 of EN 13566, read in conjunction with Part 1, specifies requirements and test methods for pipes and fittings which are part of plastics piping systems installed as continuous pipes in the renovation of nonpressure drainage and sewerage networks.	**Scope:** This Part 2 of EN 13566, read in conjunction with Part 1, specifies requirements and test methods for pipes and fittings which are part of plastics piping systems installed as continuous pipes in the renovation of nonpressure drainage and sewerage networks.

ICS 93.030

Võtmesõnad: operating requirements, pipes, properties, quality assurance, quality control, renovation, sewage, sewage pipelines, sewer pipes, sewers, specification (approval), specifications, testing, tubes, underground, underground installations, water pipes, water practice

EUROPEAN STANDARD

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English Version

Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 2: Lining with continuous pipes

Systèmes de canalisations plastiques pour la rénovation des réseaux d'assainissement enterrés sans pression - Partie 2 : Tubage par tuyau continu avec espace annulaire

Kunststoff-Rohrleitungssysteme für die Renovierung von erdverlegten drucklosen Entwässerungsnetzen (Freispiegelleitungen) - Teil 2: Rohrstrang-Lining

This European Standard was approved by CEN on 29 July 2004.

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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Foreword

This document (EN 13566-2:2005) has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

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 May 2006, and conflicting national standards shall be withdrawn at the latest by November 2007.

This standard is a Part of a System Standard for plastics piping systems of various materials used for renovation of existing pipelines in a specified application area. System Standards for renovation dealing with the following applications are either available or in preparation:

— *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks (this application);*

— *Plastics piping systems for renovation of underground water supply networks;*

— *Plastics piping systems for renovation of underground gas supply networks;*

— *Plastics piping systems for renovation of underground pressure drainage and sewerage networks;*

— *Plastics piping systems for renovation of industrial pipe systems.*

These system standards are distinguished from system standards for conventionally installed plastics piping systems by the requirement to verify certain characteristics in the “as installed” condition, after site processing. This is in addition to verification of characteristics of plastics piping systems “as manufactured”.

System standard EN 13566 comprises six parts, as follows:

— Part 1: General

— **Part 2: Lining with continuous pipes (this standard)**

— Part 3: Lining with close-fit pipes

— Part 4: Lining with cured-in-place pipes

— Part 5: Lining with discrete pipes

— Part 7: Lining with spirally wound pipes

A consistent structure of clause headings has been adopted for all parts to facilitate direct comparisons across renovation technique families.

Figure 1 shows the common Part and clause structure and the relationship between EN 13566 and system standards for other applications.

Annex A of this document is informative. Annexes B, C and D are normative.

This document includes a bibliography.

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.

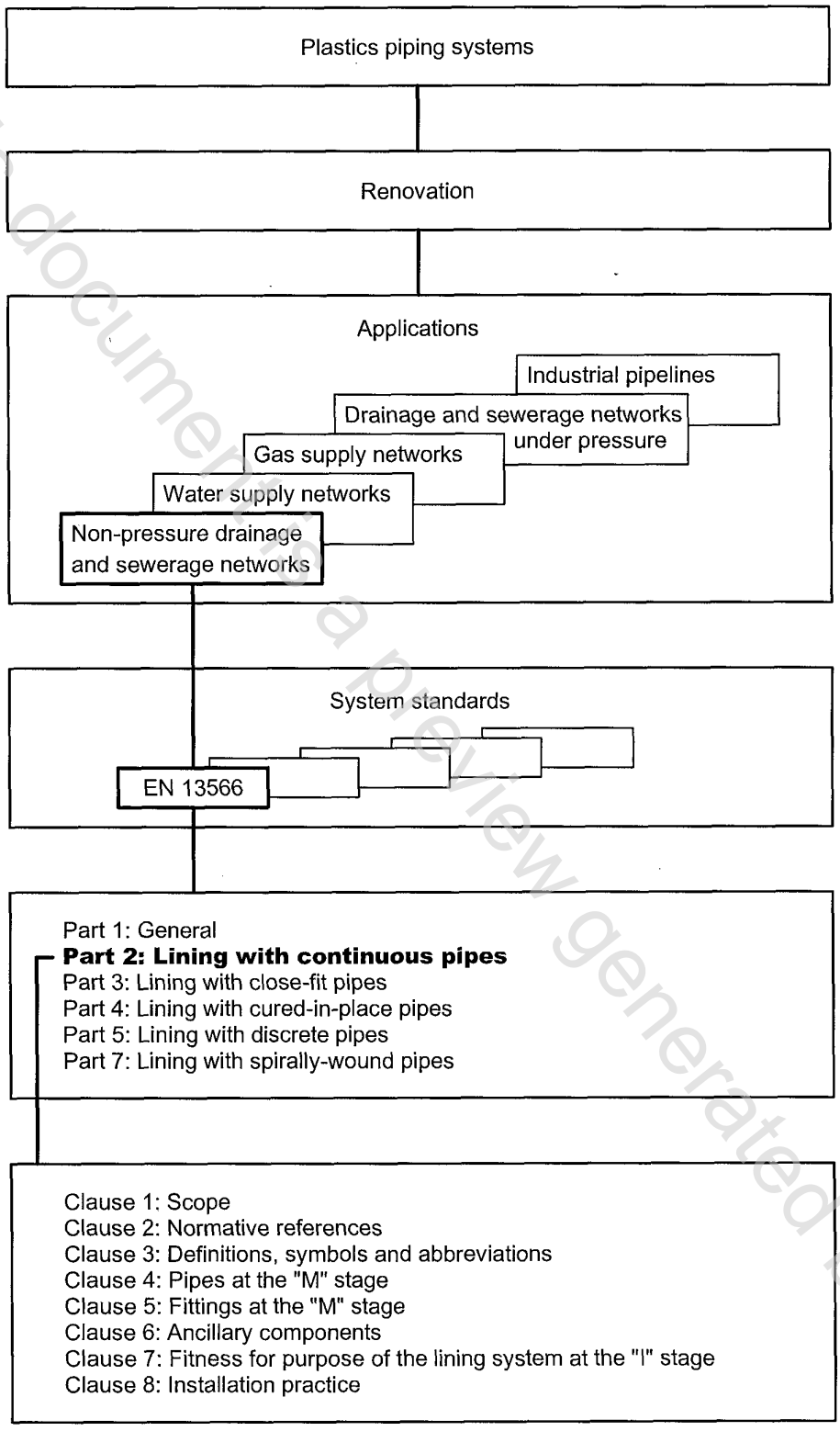

Figure 1 — Format of the renovation system standards.

Introduction

The requirements for any given renovation technique family are covered by *Part 1: General*, used in conjunction with the relevant other Part. For example, for the requirements relating to *Lining with continuous pipes*, it is necessary to refer to both Parts 1 and 2. Complementary information is contained in ISO/TR 11295 [1] and a supporting standard, EN 13689 [2], listed in the bibliography.

1 Scope

This Part 2 of EN 13566, read in conjunction with Part 1, specifies requirements and test methods for pipes and fittings which are part of plastics piping systems installed as continuous pipes in the renovation of non-pressure drainage and sewerage networks. It covers;

— homogeneous-wall (HW) pipes made of polyethylene (PE) or polypropylene (PP),

— structured-wall (SW) pipes of the corrugated double-wall type of construction as defined in Annex B,, whose structural layer(s) is (are) made of PE or PP,

— jointing of pipe lengths by means of butt fusion (HW) [1]) or electrofusion (SW),

— fabricated and injection-moulded fittings made of PE, PP and poly(vinyl chloride) (PVC-U).

NOTE The grouting procedure is outside the scope of this standard.

2 Normative references

This Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are cited hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest version of the publication referred to applies (including amendments).

EN 728, *Plastics piping and ducting systems — Polyolefin pipes and fittings — Determination of oxidation induction time.*

EN 744, *Plastics piping and ducting systems — Thermoplastics pipes — Test method for resistance to external blows by the round-the-clock method.*

EN 921:1994, *Plastics piping systems — Thermoplastics pipes — Determination of resistance to internal pressure at constant temperature (with Corrigendum EN/AC 921:1995).*

EN 1277:1996, *Plastics piping systems — Thermoplastics piping systems for buried non-pressure applications — Test methods for leaktightness of elastomeric sealing ring type joints.*

EN 1401-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system.*

EN 1446, *Plastics piping and ducting systems — Thermoplastics pipes — Determination of ring flexibility.*

EN 1852-1, *Plastic piping systems for non-pressure underground drainage and sewerage — Polypropylene (PP) — Part 1: Specifications for pipes, fittings and the system.*

EN 12666-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system.*

prEN 13476-1, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system.*

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[1]) Continuous pipes are extruded in single lengths, or are assembled by fusing individual pipe lengths at the site of installation.

EN 13566-1:2002, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 1: General*.

EN ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:1993 including Corr 1:1994).*

EN ISO 1133:1999, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics (ISO 1133:1997).*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126:2005).*

EN ISO 6259-1, *Thermoplastics pipes — Determination of tensile properties — Part 1: General test method (ISO 6259-1:1997).*

EN ISO 9967, *Thermoplastics pipes — Determination of creep ratio (ISO 9967:1994).*

EN ISO 9969, *Thermoplastics pipes — Determination of ring stiffness (ISO 9969:1994).*

EN ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pyknometer method and titration method (ISO 1183-1:2004).*

ISO 6259-3, *Thermoplastics pipes — Determination of tensile properties — Part 3: Polyolefin pipes.*

3 Terms and definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this European Standard the terms and definitions given in EN 13566-1:2002 and the following apply.

3.1.1
assembly
section of continuous pipe including any joints and/or fittings

3.1.2
maximum system diameter
diameter of the circle just circumscribing the system cross-section at its widest point

3.1.3
melt mass-flow rate
value relating to the viscosity of the molten material at a specified temperature and rate of shear

3.1.4
minimum bending radius
minimum bending radius at any point throughout the length of the pipe, measured to the longitudinal axis of the pipe

3.1.5
non-structural layer
material layer of structured-wall (SW) pipe where the contribution of the layer to the ring stiffness is not essential to satisfy the relevant class requirement (see Annex B)