

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12666-1:2006+A1:2011 sisaldab Euroopa standardi EN 12666-1:2005+A1:2011 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 30.09.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 24.08.2011.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12666-1:2006+A1:2011 consists of the English text of the European standard EN 12666-1:2005+A1:2011.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 24.08.2011.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English Version

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

Systèmes de canalisations en plastique pour les
branchements et les collecteurs d'assainissement sans
pression enterrés - Polyéthylène (PE) - Partie 1:
Spécifications pour les tubes, les raccords et le système

Kunststoff-Rohrleitungssysteme für erdverlegte
Abwasserkanäle und -leitungen - Polyethylen (PE) - Teil 1:
Anforderungen an Rohre, Formstücke und das
Rohrleitungssystem

This European Standard was approved by CEN on 24 November 2005 and includes Amendment 1 approved by CEN on 15 July 2011.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 12666-1:2005+A1:2011) 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 February 2012, and conflicting national standards shall be withdrawn at the latest by February 2012.

This document includes Amendment 1, approved by CEN on 2011-07-15.

This document supersedes EN 12666-1:2005.

A1 The main changes in the revised document are:

- relevant test methods are changed from EN to ISO versions;
- two new dimensions, 560 mm and 710 mm are introduced;
- a new ring stiffness class SN 16 is introduced;
- updating of the references in Clause 2;
- introduction of S-series in 3.3;
- introduction of S-series, a new footnote a) and a new NOTE in Table 3;
- introduction of a new watertightness test for fabricated fittings;
- deletion of Long Term Performance of TPE seals – Table 12 and 10.3;
- corrections of misprints in Tables 13 and 14 Marking of pipes and fittings;
- introduction of a new informative Annex B Product standards of components that can be connected to components conforming to this European Standard;
- updating and modification of the Bibliography. **A1**

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This European Standard is a part of a system standard for plastics piping systems of a particular material for a specified application. There are a number of such system standards.



System standards are based on the results of the work undertaken in ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids", which is a Technical Committee of the International Organization for Standardization (ISO).

They are supported by separate standards on test methods to which references are made throughout the system standard.

The system standards are consistent with general standards on functional requirements and on recommended practice for installation.

EN 12666 consists of the following parts, under the general title *Plastics piping systems for non-pressure underground drainage and sewerage - Polyethylene (PE)*

- *Part 1: Specifications for pipes, fittings and the system (this European Standard)*

—  *Part 2: Guidance for the assessment of conformity (CEN Technical Specification)* 

—  *deleted text* 

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

1 Scope

This Part of EN 12666 specifies the requirements for pipes, fittings and the system of polyethylene (PE) piping systems intended to be used for

- non-pressure underground drainage and sewerage outside the building structure (application area code "U"), and
- non-pressure underground drainage and sewerage for both buried in the ground within the building structure (application area code "D") and outside the building structure.

This is reflected in the marking of products by "U" and "UD".

It also specifies the test parameters for the test methods referred to in this European Standard.

This European Standard covers a range of nominal sizes, a range of pipe series/stiffness classes and gives recommendations concerning colours.

NOTE 1 It is the responsibility of the purchaser or specifier to make the appropriate selection from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

In conjunction with CEN/TS 12666-2 [1] it is applicable to PE pipes and fittings, their joints and to joints with components of other plastics and non-plastics materials intended to be used for buried piping systems for non-pressure drainage and sewerage.

This European Standard is applicable to PE pipes with or without an integral socket.

The fittings can be manufactured by injection-moulding or be fabricated from pipes and/or mouldings.

This European Standard is applicable to PE pipes and fittings for the following types of joints:

- elastomeric ring seal joints;
- butt fused joints;
- electrofusion joints;
- mechanical joints.

NOTE 2 Requirements and limiting values for application area code "D" are given in Tables 3, 6 and Table 12.

NOTE 3 Pipes, fittings and other components conforming to any of the plastics product standards listed in the bibliography may be used with pipes and fittings conforming to this European Standard, provided they conform to the requirements for joint dimensions given in Clause 6 and to the requirements of Table 8 and Table 12.

2 Normative references

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

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber*

EN 681-2, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 2: Thermoplastic elastomers*

⌈A1⌋ *deleted text* ⌋A1⌋

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 1519-1:1999, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure — Polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system*

Ⓐ1 deleted text Ⓐ1

Ⓐ1 CEN/TS 14541:2007, *Plastics pipes and fittings for non-pressure applications — Utilisation of non-virgin PVC-U, PP and PE materials* Ⓐ1

EN ISO 472:2001, *Plastics — Vocabulary (ISO 472:1999)*

EN ISO 580:2005, *Plastics piping and ducting systems - Injection-moulded thermoplastics fittings - Methods for visually assessing the effects of heating (ISO 580:2005)*

EN ISO 1043-1:2005, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1:2005)*

EN ISO 1133:2005, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics (ISO 1133:2005)*

Ⓐ1 EN ISO 1167-1, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method (ISO 1167-1:2006)* Ⓐ1

EN ISO 2505:2005, *Thermoplastics pipes — Longitudinal reversion — Test method and parameters (ISO 2505:2005)*

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

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

Ⓐ1 EN ISO 9969:2007 Ⓐ1, *Thermoplastics pipes — Determination of ring stiffness* (Ⓐ1 ISO 9969:2007 Ⓐ1)

Ⓐ1 ISO 11357-6, *Plastics — Differential scanning calorimetry (DSC) — Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation temperature (dynamic OIT)*

ISO 13254, *Thermoplastics piping systems for non-pressure applications — Test method for watertightness*

ISO 13257, *Thermoplastics piping systems for non-pressure applications — Test method for resistance to elevated temperature cycling*

ISO 13259, *Thermoplastics piping systems for non-pressure applications — Test method for leaktightness for elastomeric sealing ring type joints*

ISO 13263, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics fittings — Test method for impact strength*

ISO 13264, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics fittings — Test method for mechanical strength or flexibility of fabricated fittings* Ⓐ1