

Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 2: Lining with continuous pipes (ISO 11296-2:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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ICS 23.040.20, 23.040.45, 91.140.80, 93.030

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EUROPEAN STANDARD

EN ISO 11296-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 23.040.45; 23.040.20; 91.140.80; 93.030

Supersedes EN 13566-2:2005

English Version

**Plastics piping systems for renovation of underground
non-pressure drainage and sewerage networks - Part 2:
Lining with continuous pipes (ISO 11296-2:2018)**

Systemes de canalisations en plastique pour la
rénovation des réseaux de branchements et de
collecteurs d'assainissement enterrés sans pression -
Partie 2: Tubage par tuyau continu avec espace
annulaire (ISO 11296-2:2018)

Kunststoff-Rohrleitungssysteme zur Renovierung von
erdverlegten drucklosen Entwässerungsnetzen
(Freispiegelleitungen) - Teil 2: Rohrstrang-Lining (ISO
11296-2:2018)

This European Standard was approved by CEN on 10 September 2017.

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.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 11296-2:2018) has been prepared by Technical Committee ISO/TC 138 “Rehabilitation of pipeline systems” in collaboration with 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 August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes EN 13566-2:2005.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 11296-2:2018 has been approved by CEN as EN ISO 11296-2:2018 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 8, *Rehabilitation of pipeline systems*.

A list of all parts in the ISO 11296 series can be found on the ISO website.

Introduction

This document is 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:

- ISO 11296, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks (this application)*;
- ISO 11297, *Plastics piping systems for renovation of underground drainage and sewerage networks under pressure*;
- ISO 11298, *Plastics piping systems for renovation of underground water supply networks*;
- ISO 11299, *Plastics piping systems for renovation of underground gas supply networks*.

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”.

Each of the system standards comprises a:

- *Part 1: General*

and all applicable renovation technique family-related parts, which for non-pressure drainage and sewerage networks include or potentially include the following:

- *Part 2: Lining with continuous pipes (this document)*
- *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*
- *Part 8: Lining with pipe segments*
- *Part 9: Lining with rigidly anchored plastics inner layer*
- *Part 10: Lining with sprayed polymeric materials*

The requirements for any given renovation technique family are specified in ISO 11296-1, applied in conjunction with the relevant other part. For example, both ISO 11296-1 and this document together specify the requirements relating to lining with continuous pipes. For complementary information, see ISO 11295. Not all technique families are pertinent to every area of application and this is reflected in the part numbers included in each System Standard.

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 ISO 11296 and system standards for other applications.

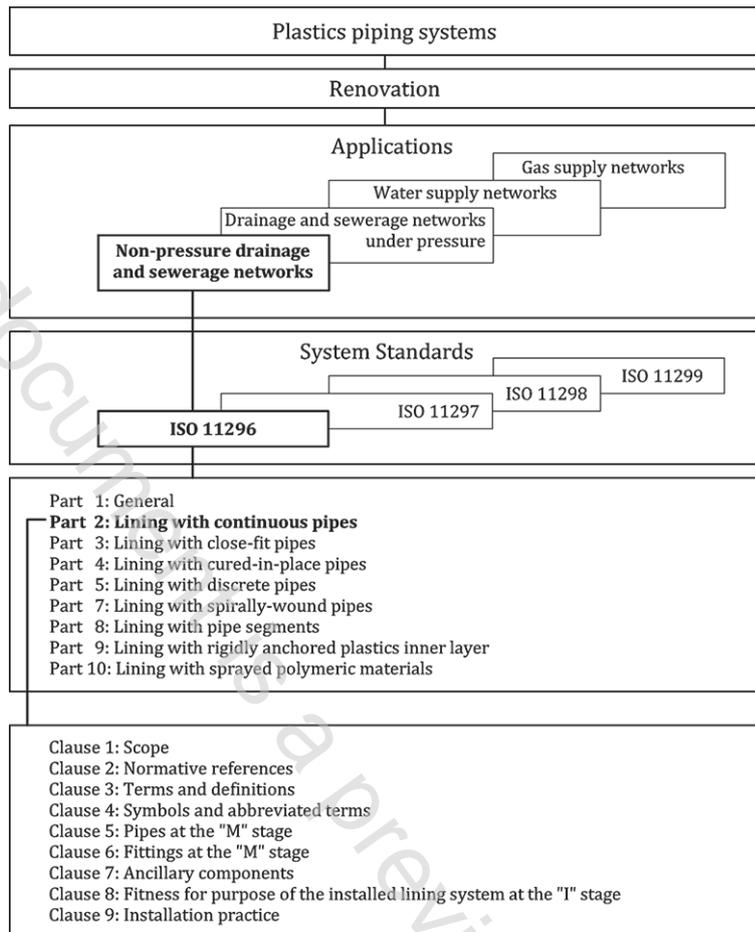


Figure 1 — Format of the renovation system standards

Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks —

Part 2: Lining with continuous pipes

1 Scope

This document, in conjunction with ISO 11296-1, specifies requirements and test methods for pipes and fittings which are part of plastics piping systems installed as continuous pipes in the renovation of underground non-pressure drainage and sewerage networks. It is applicable to polyethylene (PE) pipes of three different types:

- PE solid wall single layered pipes (nominal outside diameter, d_n), including any identification stripes;
- PE pipes with co-extruded layers on either or both the outside and inside of the pipe (total outside diameter, d_n), as specified in [Annex A](#), where all layers have the same MRS rating;
- PE coated pipes (outside diameter, d_n) having a peelable, contiguous, thermoplastics additional layer on the outside of the pipe (“coated pipe”), see [Annex A](#).

In addition it covers:

- jointing of pipe lengths by means of butt fusion;
- fabricated and injection-moulded fittings made of PE.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 8772, *Plastics piping systems for non-pressure underground drainage and sewerage — Polyethylene (PE)*

ISO 11296-1:2018, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 1: General*

ISO 12176-1, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 1: Butt fusion*

ISO 12176-2, *Plastics pipes and fittings — Equipment for fusion jointing polyethylene systems — Part 2: Electrofusion*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11296-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>