# SLOVENSKI STANDARD
# oSIST prEN ISO 11300-1:2025

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**Cevni sistemi za obnovo podzemnih odtokov, kanalizacije in vodovodnih omrežij - 1. del: Polietilen (PE) (ISO/DIS 11300-1:2025)**

Piping systems for rehabilitation of underground drains, sewers and water supply networks - Part 1: Polyethylene (PE) material (ISO/DIS 11300-1:2025)

Rohrleitungssysteme für die Sanierung von unterirdischen Entwässerungs-, Kanalisations- und Wasserversorgungsnetzen - Teil 1: Werkstoff Polyethylen (PE) (ISO/DIS 11300-1:2025)

Systèmes de canalisations pour la réhabilitation des branchements, des collecteurs d'assainissement et des réseaux d'alimentation en eau enterrés - Partie 1: Matériau polyéthylène (PE) (ISO/DIS 11300-1:2025)



**Ta slovenski standard je istoveten z:** **prEN ISO 11300-1**

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**ICS:**

| | | |
|---|---|---|
| 23.040.05 | Cevovodi za zunanje sisteme za odpadno vodo in njihovi deli | Pipeline and its parts for external sewage systems |
| 91.140.80 | Drenažni sistemi | Drainage systems |
| 93.025 | Zunanji sistemi za prevajanje vode | External water conveyance systems |
| 93.030 | Zunanji sistemi za odpadno vodo | External sewage systems |

**oSIST prEN ISO 11300-1:2025** **en,fr,de**

# DRAFT International Standard

# ISO/DIS 11300-1

# Piping systems for rehabilitation of underground drains, sewers and water supply networks —

## Part 1: Polyethylene (PE) material

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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.*

For piping systems made from polyethylene (PE) material, this document replaces the related content, including requirements, of the system standards:
ISO 11296-1, -2, -3, ISO 11297-1, -2, -3, ISO 11298-1, -2, -3 and ISO 21225-1, -2.

ISO 11300-2 similarly replaces for piping systems using Thermoset composite materials, the content of the standards: ISO 11296-1, -4, ISO 11297-1, -4 and ISO 11298-1, -4.



ISO 11300-3 similarly replaces for piping systems using PVC-U material, the content of the standards:
ISO 11296-1, -3.

ISO 11300-4 similarly replaces for piping systems using Thermoplastic composite materials, the content of the standards: ISO 11296-1, -7, -9 (and ISO 11298-1, -11).

A list of all parts in the ISO 11300 series, can be found on the ISO website.

Once all three parts of ISO 11300 have been published, the above mentioned replaced standards will be withdrawn.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

# Introduction

This document is a part of a System Standard for piping systems of various materials used for the rehabilitation of existing pipelines in a specified application area. System Standards for rehabilitation deal with the following applications:

— ISO 11300: *Piping systems for rehabilitation of underground drains, sewers and water supply networks*; (this standard)

— ISO 11301: *Piping systems for rehabilitation of underground gas supply networks*.

The System Standards ISO 11300 and ISO 11301 are subdivided into parts covering a specific material per pipe system.

ISO 11300 is subdivided in four parts:

— *Part 1: Polyethylene (PE) material* (this document);

— *Part 2: Thermoset composite materials*;

— *Part 3: PVC-U material;*

— *Part 4: Thermoplastic composite materials.*

These System Standards cover various techniques for renovation and trenchless replacement. Furthermore, they are distinguished from those 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 specifying requirements for piping system components “as manufactured”.

A consistent structure of clause headings has been adopted for all parts of ISO 11300 and ISO 11301, in order to facilitate direct comparisons across renovation technique families.

Figure 1 shows the clause structure and the relationship between ISO 11300 and ISO 11301.

For complementary information, see ISO 11295[2].

For assessment of conformity to the requirements of this document, see ISO/TS 23818-1[3].



System Standard ISO 11300 covers the relevant content of and replaces the following previous System Standards for the rehabilitation of existing drains and sewers;

— The ISO 11296 series: Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks;

— The ISO 11297 series: Plastics piping systems for renovation of underground drainage and sewerage networks under pressure;

— The ISO 11298 series: Plastics piping systems for renovation of underground water supply networks;

— The ISO 21225 series: Plastics piping systems for the trenchless replacement of underground pipeline networks.

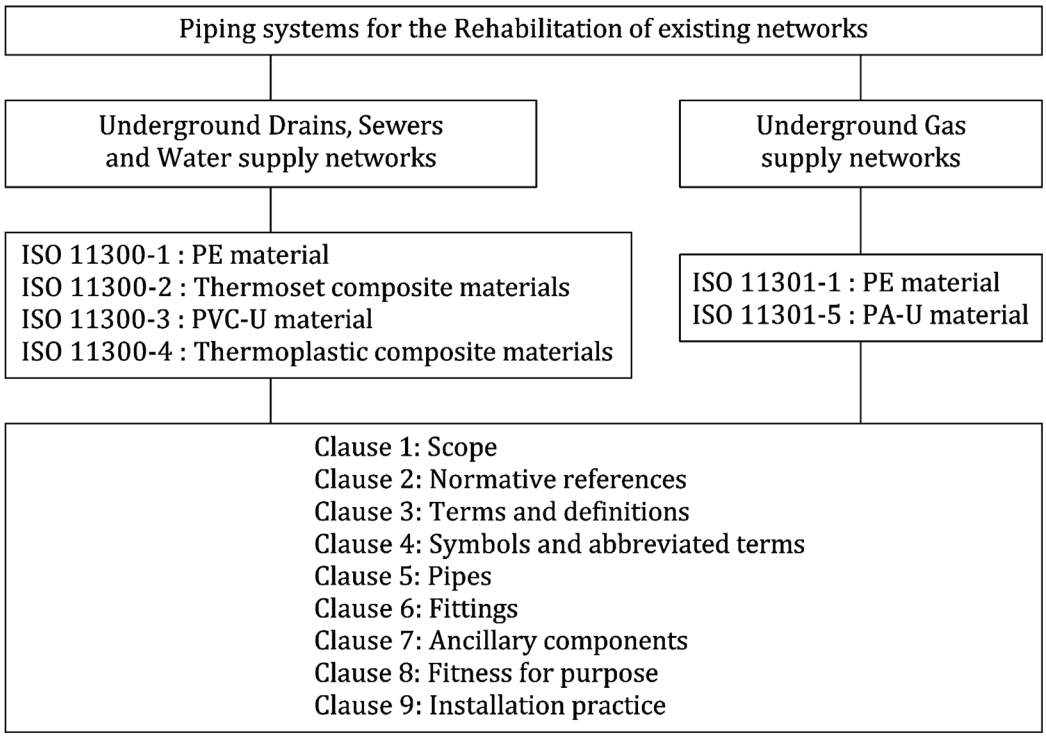


**Figure 1 — Format of the rehabilitation system standards**

# Piping systems for rehabilitation of underground drains, sewers and water supply networks —

# Part 1: Polyethylene (PE) material

## 1 Scope

This document specifies requirements and test methods for pipes and fittings which are part of piping systems for the rehabilitation by means of renovation and trenchless replacement of underground non-pressure and pressure drains and sewers and water supply networks, which transport water intended for human consumption, including raw water pipelines.

It is applicable to polyethylene (PE) pipes, fittings and assemblies, as manufactured and as installed. It is not applicable to the existing pipeline.

It is applicable to technique families for renovation:

— lining with continuous pipes;

— lining with close-fit pipes;

and technique families for trenchless replacement:

— pipe bursting and pipe extraction;

— horizontal directional drilling and impact moling.

and intended to be used at an operating temperature of 20 °C as the reference temperature.



NOTE For applications operating at constant temperatures greater than 20 °C and up to 40 °C, see ISO 4427-1:2019, Annex A.

When used with lining with continuous pipes, lining with close-fit pipes and trenchless replacement technique families, this document is applicable to:

— 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 E, where all layers have the same MRS rating.

Furthermore, when used with lining with continuous pipes and trenchless replacement this document is applicable to:

— PE coated pipes (outside diameter, $d_n$) having a peelable, contiguous, thermoplastics additional layer on the outside of the pipe ("coated pipe"), as specified in Annex E.

This document is applicable to jointing by means of butt fusion and electrofusion and to fabricated and injection-moulded fittings and mechanical connections 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 497, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers*

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 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces*

ISO 2505, *Thermoplastics pipes — Longitudinal reversion — Test method and parameters*

ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions*

ISO 4427-1:2019, *Plastics piping systems for water supply and for drainage and sewerage under pressure — Polyethylene (PE) — Part 1: General*

ISO 4427-2, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 2: Pipes*

ISO 4427-3, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 3: Fittings*

ISO 4427-5, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 5: Fitness for purpose of the system*

ISO 4633, *Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials*

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

ISO 9967, *Thermoplastics pipes — Determination of creep ratio*

ISO 9969, *Thermoplastics pipes — Determination of ring stiffness*

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 1: Electrofusion*

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

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

EN 681-3, *Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Part 3: Cellular materials of vulcanized rubber*

EN 681-4, *Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Part 4: Cast polyurethane sealing elements*

EN 12201-1, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 1: General*

EN 12201-2, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 2: Pipes*

EN 12201-3, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 3: Fittings*

EN 12201-5, *Plastics piping systems for water supply, and for drainage and sewerage under pressure — Polyethylene (PE) — Part 5: Fitness for purpose of 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*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

### 3.1 General

**3.1.1**
**pipeline system**
interconnecting pipe network for the conveyance of fluids

**3.1.2**
**drain**
conduit which conveys wastewater, surface water or other unwanted liquids, including its connections to lateral pipes, manholes, gullies and other network components

[SOURCE: ISO 6707-1:2020, 3.3.4.38, modified to include connections as stated]

**3.1.3**
**sewer**
pipeline which conveys unwanted liquids, including its connections to lateral pipes, manholes, access chambers and other network components

[SOURCE: ISO 6707-1:2020, 3.3.4.41, modified to include connections as stated]

**3.1.4**
**rehabilitation**
measures for restoring or upgrading the performance of existing *pipeline systems* (3.1.1), including *renovation* (3.1.5), *repair* (3.1.6) and *replacement* (3.1.7)

**3.1.5**
**renovation**
work incorporating all or part of the original fabric of the pipeline, by means of which its current performance is improved

**3.1.6**
**repair**
rectification of local damage

**3.1.7**
**replacement**
construction of a new pipeline, on or off the line of an existing pipeline, where the function of the new *pipeline system* (3.1.1) incorporates that of the old

**3.1.8**
**trenchless replacement**
*replacement* (3.1.7) without opening trenches other than small excavations to provide access for the particular technique and for service and lateral connections

**3.1.9**
**maintenance**
routine work undertaken to ensure the existing performance of an asset

**3.1.10**
**lining pipe**
pipe for renovation purposes prior to any site processing

**3.1.11**
**liner**
*lining pipe* (3.1.10) after installation

**3.1.12**
**lining system**
*lining pipe* (3.1.10) and all relevant fittings for insertion into an existing pipeline for the purposes of *renovation* (3.1.5)

**3.1.13**
**replacement pipe**
new pipe installed for rehabilitation purposes

**3.1.14**
**characteristic**
property, dimension or other feature of a material or component



**3.1.15**
**declared value**
limiting value of a *characteristic* (3.1.14) declared in advance by the *lining system* (3.1.12) supplier, which becomes the requirement for the purposes of assessment of conformity



**3.1.16**
**system test pressure**
either hydrostatic or air pressure, or both applied to the installed *pipeline system* (3.1.1) in order to ensure its integrity and leaktightness

**3.1.17**
**simulated installation**
installation of a *lining system* (3.1.12) into a *simulated host pipeline* (3.1.18), using representative equipment and processes, to provide samples for testing which are representative of an actual installation

**3.1.18**
**simulated host pipeline**
section of pipeline, which is not part of an operational network, but which replicates the environment of an operational network

**3.1.19**
**technique family**
group of rehabilitation techniques which are considered to have common characteristics for standardization purposes

**3.1.20**
**coated pipe**
pipe with a peelable, contiguous thermoplastic additional layer on the outside of the pipe

**3.1.21**
**solid wall single layered pipe**
pipe with smooth internal and external surface, extruded from the same compound throughout the wall