SLOVENSKI STANDARD
oSIST prEN ISO 11301-1:2025

01-maj-2025

Cevni sistemi za obnovo podzemnih omrežij za oskrbo s plinom - 1. del: Polietilen (PE) (ISO/DIS 11301-1:2025)

Piping systems for rehabilitation of underground gas supply networks - Part 1: Polyethylene (PE) material (ISO/DIS 11301-1:2025)

Rohrleitungssysteme für die Sanierung von erdverlegten Gasversorgungsnetzwerken - Teil 1: Werkstoff Polyethylen (PE) (ISO/DIS 11301-1:2025)

Systèmes de canalisations pour la réhabilitation des réseaux de distribution de gaz enterrés - Partie 1: Matériau Polyéthylène (PE) (ISO/DIS 11301-1:2025)

Ta slovenski standard je istoveten z: **prEN ISO 11301-1**

ICS:

83.140.30	Polimerne cevi in fitingi za snovi, ki niso tekočine	Plastics pipes and fittings for non fluid use
91.140.40	Sistemi za oskrbo s plinom	Gas supply systems

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DRAFT International Standard

ISO/DIS 11301-1

Piping systems for rehabilitation of underground gas supply networks —

Part 1: Polyethylene (PE) material

Systèmes de canalisations pour la réhabilitation des réseaux de distribution de gaz enterrés —

Partie 1: Matériau Polyéthylène (PE)

ICS: 75.200; 23.040.20; 23.040.45

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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 11299-1, -2, -3 and ISO 21225-1, -2.

Once this part of ISO 11301-1 has 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*;

— 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 into four parts:

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

— *Part 2: Thermoset composite materials*;

— *Part 3: Polyvinyl chloride (PVC-U) material;*

— *Part 4: Thermoplastic composite materials*;

ISO 11301 currently consists of two parts:

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

— *Part 5: Polyamide (PA-U) material* (under development)

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[1].

System Standard ISO 11301-1 covers the content and replaces, for PE pipe systems, existing System Standards for the rehabilitation of existing gas supply networks:

— The ISO 11299 series: Plastics piping systems for renovation of underground gas supply networks;

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

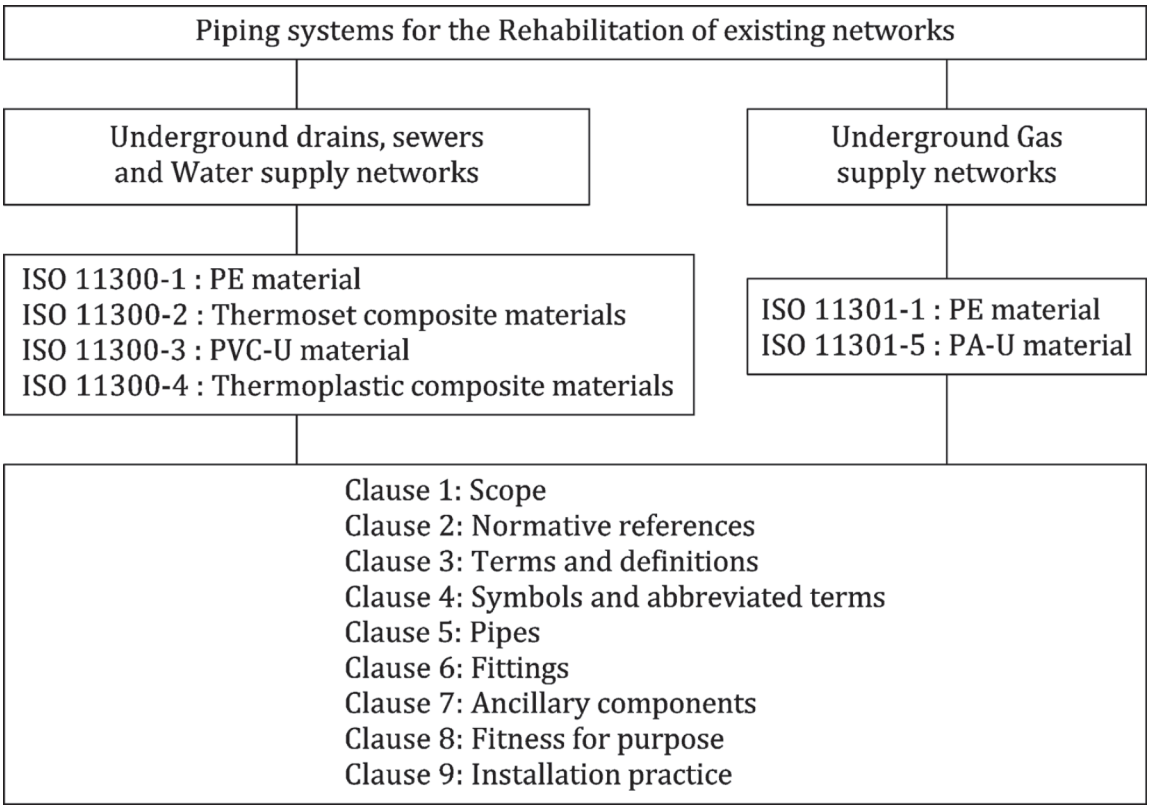

Figure 1 — Format of the rehabilitation system standards

Piping systems for rehabilitation of underground gas 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 gas supply networks.

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 4437-5:2024, Annex A.

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 D, 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 D.

When used with lining with close-fit lining pipes, the lining pipe is reduced in the factory or on site to provide a close-fitting independent or interactive pressure pipe liner.

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.

This document is not applicable to push-fit jointed discrete pipes assembled as part of the trenchless installation process.

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

ISO 4437-1, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*

ISO 4437-2, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes*

ISO 4437-3, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*

ISO 4437-4, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 4: Valves*

ISO 4437-5:2024, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 5: Fitness for purpose of the system*

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*

ISO 16010, *Elastomeric seals — Material requirements for seals used in pipes and fittings carrying gaseous fuels and hydrocarbon fluids*

EN 682, *Elastomeric seals — Material requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids*

EN 1555-1, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*

EN 1555-2, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes*

EN 1555-3, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*

EN 1555-4, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 4: Valves*

EN 1555-5:2021, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 5: Fitness for purpose of 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
rehabilitation
measures for restoring or upgrading the performance of existing *pipeline systems* (3.1.1), including *renovation* (3.1.3), *repair* (3.1.4) and *replacement* (3.1.5)