



SLOVENSKI STANDARD SIST EN ISO 11295:2022

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Cevni sistemi iz polimernih materialov za obnovo cevovodov - Razvrstitev in pregled strateških, taktičnih in operativnih dejavnosti (ISO 11295:2022)

Plastics piping systems used for the rehabilitation of pipelines - Classification and overview of strategic, tactical and operational activities (ISO 11295:2022)

Kunststoff-Rohrleitungssysteme, die für die Sanierung verwendet werden - Klassifizierung und Überblick über strategische und operative Aktivitäten (ISO 11295:2022)

Systèmes de canalisation en plastique destinés à la réhabilitation des réseaux enterrés - Classification et vue d'ensemble des activités stratégiques, tactiques et opérationnelles (ISO 11295:2022)

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ICS:

23.040.01	Deli cevovodov in cevovodi na splošno	Pipeline components and pipelines in general
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English Version

Plastics piping systems used for the rehabilitation of pipelines - Classification and overview of strategic, tactical and operational activities (ISO 11295:2022)

Systèmes de canalisation en plastique destinés à la réhabilitation des réseaux enterrés - Classification et vue d'ensemble des activités stratégiques, tactiques et opérationnelles (ISO 11295:2022)

Kunststoff-Rohrleitungssysteme, die für die Sanierung verwendet werden - Klassifizierung und Überblick über strategische und operative Aktivitäten (ISO 11295:2022)

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European foreword

This document (EN ISO 11295:2022) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" 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of an identical text or by endorsement, at the latest by August 2022, and conflicting national standards shall be withdrawn at the latest by August 2022.

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INTERNATIONAL
STANDARD

ISO
11295

Third edition
2022-01

**Plastics piping systems used for
the rehabilitation of pipelines —
Classification and overview of
strategic, tactical and operational
activities**

iTeh STANDARD
PREVIEW

*Systèmes de canalisation en plastique destinés à la réhabilitation
des réseaux enterrés — Classification et vue d'ensemble des activités
stratégiques, tactiques et opérationnelles*

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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 of 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 www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 138 *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 8, *Rehabilitation of pipeline systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11295:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

- Title is renewed from “*Classification and information on design and applications of plastics piping systems used for renovation and replacement*” to “*Plastics piping systems used for the rehabilitation of pipelines — Classification and overview of strategic, tactical and operational activities*”;
- [Clause 5](#) has been added, describing the whole process of pipeline rehabilitation with references to the other clauses for further details;
- [Clause 6](#) has been added, dealing with the strategic and tactical activities necessary to decide whether to rehabilitate; parts of the content of the former Clause 8 are included in this new clause;
- Former Clauses 5, 6 and 7 have been combined into [Clause 7](#) with largely unchanged content;
- [Clause 8](#) has been added, outlining the further tactical and operational steps needed to specify the rehabilitation project; parts of the content of the former Clauses 8 and 9 are included;
- [Clause 9](#) still covers installation aspects but has been revised to include content on acceptance control.

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.

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Introduction

Pipeline systems are continuously required to satisfy physical, chemical, biochemical and biological demands. These demands depend on planning, material, construction, type and period of use.

When pipeline systems become operational, they constitute a valuable asset to the network owner, requiring adequate management, including monitoring the performance of the pipeline system. For general guidelines and requirements on asset management, ISO 55000, ISO 55001 and ISO 55002 are applicable.

For the specific case of pipelines for water supply and wastewater collection, detailed information on the overall management of the networks is provided by ISO 24516-1 and ISO 24516-3.

In the case of loss of performance of a pipeline system, reactive measures initially focus on improving regular maintenance procedures, including cleaning. In case of deterioration or other serious defects, more stringent measures to rehabilitate the pipeline become necessary.

Rehabilitation is carried out when there is a need to restore or upgrade the performance of a pipeline system. Rehabilitation can consist of repair, renovation or replacement. In recent years, the rehabilitation of pipeline systems has become increasingly important and will continue to be so.

This document provides information on the design process when considering rehabilitation of an existing pipeline, in order of sequence:

- a) investigation and assessment of the deficiencies of current performance of the existing pipeline;
- b) determination of viable options, based on performance criteria and process-related factors;
- c) specification of the selected type of technique and the required pipe material;
- d) the installation;
- e) testing the performance.

The techniques used for the renovation and trenchless replacement of existing pipelines are classified in technique families and the typical characteristics of each are described in general terms.

Plastics piping systems used for the rehabilitation of pipelines — Classification and overview of strategic, tactical and operational activities

1 Scope

This document specifies the steps of the overall process of pipeline rehabilitation, comprising:

- information on strategic and tactical activities:
 - a) investigation and condition assessment of the existing pipeline;
 - b) pipeline rehabilitation planning.
- information on and requirements for operational activities:
 - c) project specification;
 - d) applications of techniques;
 - e) documentation of the design and application process.

Definitions and classification of families of renovation and trenchless replacement techniques are provided, and their respective features described. Areas of application covered include underground drainage and sewerage networks and underground water and gas supply networks.

The following aspects are not covered by the scope of this document:

- new construction provided as network extensions;
- calculation methods to determine, for each viable technique, the characteristics of lining or replacement pipe material needed to secure the desired performance of the rehabilitated pipeline;
- techniques providing non-structural pressure pipe liners;
- techniques for local repair.

It is the responsibility of the designer to choose and design the renovation or trenchless replacement pipeline system.

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 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1043-1 and the following apply.

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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 terms

3.1.1 assessment

process, or result of this process, comparing a specified subject matter to relevant references

3.1.2 design working life

assumed period for which a structure or part of it is to be used for its intended purpose with anticipated *repair* (3.1.7) and *maintenance* (3.1.11) but without *renovation* (3.1.6) or *replacement* (3.1.8) being necessary

3.1.3 hazard

condition of water, or biological, chemical, physical or radiological agent with the potential to cause harm to public health

Note 1 to entry: Condition includes quantity.

[SOURCE: EN 15975-1:2011+A1:2015, 2.6; modified]

3.1.4 pipeline system

interconnecting pipe network for the conveyance of fluids

[SOURCE: ISO 11298-1:2018, 3.1.1]

3.1.5 rehabilitation

measures for restoring or upgrading the performance of existing *pipeline systems* (3.1.4), including *renovation* (3.1.6), *repair* (3.1.7) and *replacement* (3.1.8)

3.1.6 renovation

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

3.1.7 repair

rectification of local damage

3.1.8 replacement

construction of a new pipeline, on or off the line of an existing pipeline, where the function of the new *pipeline system* (3.1.4) incorporates that of the old

3.1.9 network extension

new construction off the line of a pipeline or a network with the aim to expand the total capacity of the network

3.1.10 trenchless replacement

replacement (3.1.8) without opening trenches other than small excavations to provide access for the particular technique

3.1.11**maintenance**

routine work undertaken to ensure the continuing performance of a *pipeline system* (3.1.4)

3.1.12**independent pressure pipe liner**

liner (3.2.3) capable on its own of resisting without failure all applicable internal loads throughout its design life

3.1.13**interactive pressure pipe liner**

liner (3.2.3) which relies on the existing pipeline for radial support in order to resist without failure all applicable internal loads throughout its design life

3.1.14**fully structural renovation**

use of an *independent pressure pipe liner* (3.1.12) which is capable of resisting all external loads irrespective of the condition of the existing pipeline

3.1.15**semi-structural renovation**

use of an *interactive pressure pipe liner* (3.1.13) which is capable of long-term hole and gap spanning at operational pressure

3.1.16**non-structural renovation**

use of an *interactive pressure pipe liner* (3.1.13) which is not capable of long-term hole and gap spanning at operational pressure

3.1.17**flow diversion**

temporary isolation of the section of pipeline to be rehabilitated by the use of a temporary bypass or other means

3.2 Terms related to techniques**3.2.1****technique family**

grouping of *renovation* (3.1.6) or *trenchless replacement* (3.1.10) techniques which are considered to have common characteristics for standardization purposes

3.2.2**lining pipe**

pipe inserted for *renovation* (3.1.6) purposes

3.2.3**liner**

lining pipe (3.2.2) after installation

3.2.4**lining system**

lining pipe (3.2.2) and all relevant fittings inserted into an existing pipeline for the purposes of *renovation* (3.1.6)

3.2.5**lining with continuous pipes**

lining with pipe made continuous prior to insertion, where the diameter of the *lining pipe* (3.2.2) remains unchanged