

STN	Triedenie potrubných systémov z plastov používaných na renováciu a výmenu a informácie na ich navrhovanie (ISO 11295: 2017)	STN EN ISO 11295 75 6127
------------	--	--

Classification and information on design and applications of plastics piping systems used for renovation and replacement (ISO 11295:2017)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/18

Obsahuje: EN ISO 11295:2017, ISO 11295:2017

Oznámením tejto normy sa ruší
STN EN ISO 11295 (75 6127) z novembra 2010

126400

EUROPEAN STANDARD

EN ISO 11295

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2017

ICS 23.040.01

Supersedes EN ISO 11295:2010

English Version

Classification and information on design and applications of plastics piping systems used for renovation and replacement (ISO 11295:2017)

Classification et informations relatives à la conception
et aux applications des systèmes de canalisation en
plastique destinés à la rénovation et au remplacement
(ISO 11295:2017)

Klassifizierung und Informationen zur Planung und
Anwendung von Kunststoff-Rohrleitungssystemen für
die Renovierung und Erneuerung (ISO 11295:2017)

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

EN ISO 11295:2017 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 11295:2017) 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 June 2018 and conflicting national standards shall be withdrawn at the latest by June 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 ISO 11295:2010.

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 11295:2017 has been approved by CEN as EN ISO 11295:2017 without any modification.

INTERNATIONAL STANDARD

ISO
11295

Second edition
2017-11

Classification and information on design and applications of plastics piping systems used for renovation and replacement

*Classification et informations relatives à la conception et aux
applications des systèmes de canalisations en plastique destinés à la
rénovation et au remplacement*



Reference number
ISO 11295:2017(E)

© ISO 2017

ISO 11295:2017(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	5
5 Classification of renovation and replacement techniques	6
6 Classification of renovation techniques	7
6.1 General.....	7
6.2 Lining with continuous pipes.....	7
6.3 Lining with close-fit pipes.....	9
6.4 Lining with cured-in-place pipes.....	11
6.5 Lining with discrete pipes.....	14
6.6 Lining with adhesive-backed hoses.....	16
6.7 Lining with spirally-wound pipes.....	18
6.8 Lining with pipe segments.....	20
6.9 Lining with a rigidly anchored plastics inner layer.....	22
6.10 Lining with sprayed polymeric materials.....	23
6.11 Lining with inserted hoses.....	25
7 Classification of trenchless replacement techniques	26
7.1 General.....	26
7.2 Pipe bursting.....	26
7.3 Pipe removal.....	29
7.3.1 General.....	29
7.3.2 Pipe eating.....	29
7.3.3 Pipe extraction.....	29
7.4 Horizontal directional drilling — HDD.....	31
7.5 Impact moling.....	34
7.6 Pipe jacking.....	35
7.6.1 General.....	35
7.6.2 Auger boring.....	35
7.6.3 Microtunnelling.....	36
8 Information on design	38
8.1 General.....	38
8.2 Condition assessment.....	38
8.2.1 General.....	38
8.2.2 Pipeline condition affecting functional performance.....	39
8.2.3 Site conditions affecting design.....	40
8.3 System functions.....	40
8.3.1 Renovation.....	40
8.3.2 Replacement.....	41
8.4 Performance criteria.....	41
8.4.1 Structural performance.....	41
8.4.2 Hydraulic performance.....	45
8.5 Other factors affecting technique family selection.....	45
9 Aspects affecting installation	46
9.1 Site conditions affecting installation.....	46
9.1.1 Working space requirements.....	46
9.1.2 Environmental impact.....	46
9.1.3 Assessment of site conditions.....	47
9.2 Work preparatory for installation.....	47

ISO 11295:2017(E)

9.2.1	General.....	47
9.2.2	Location of existing pipeline system	47
9.2.3	Dimensions of existing pipeline system	48
9.2.4	Provision for maintenance of pipeline service	48
9.2.5	Preparation of existing pipeline	48
Bibliography	49

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 ISO/TC 138 *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 8, *Rehabilitation of pipeline systems*.

This second edition cancels and replaces the first edition (ISO 11295:2010), which has been technically revised.

This edition includes the following significant changes with respect to the previous edition:

- [Clauses 3, 4, 5](#) and [6](#) have been technically revised;
- [Clause 7](#) for the classification of replacement techniques has been added.

ISO 11295:2017(E)**Introduction**

This document classifies the techniques used for the renovation and trenchless replacement of existing pipelines and gives information on the design and application of plastics piping systems used for such rehabilitation.

In recent years, the rehabilitation of pipeline systems has become increasingly important and will continue to be so.

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, proper system management has to be put in place. In addition to inspection and cleaning, rehabilitation of the pipeline can be required. 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.

To coincide with the publication of ISO rehabilitation product standards for various application areas using methods other than renovation, the need to extend the scope of this document to include families of trenchless replacement techniques was recognized.

Classification and information on design and applications of plastics piping systems used for renovation and replacement

1 Scope

This document defines and describes families of techniques for the renovation and trenchless replacement (on or off the line of an existing pipeline) of non-pressure and pressure pipelines through the use of plastics pipes, including plastics composites formed *in situ* into pipes, fittings and ancillary components. It does not include new construction provided as network extension. For each technique family, it identifies areas of application including, but not limited to, underground drainage and sewerage, and underground water and gas supply networks.

This document provides information on the principles of, but not the detailed methodologies for, the design of plastics piping systems used for renovation or trenchless replacement of existing pipelines, covering:

- existing pipeline and site conditions;
- functions of the new pipeline;
- structural performance;
- hydraulic performance;
- installation aspects and site impact;
- other factors affecting renovation or trenchless replacement technique selection.

Necessary work on the existing pipeline prior to renovation and/or trenchless replacement is outside the scope of this document.

This document provides information needed to determine viable options and for identification of the optimal technique with regard to a given set of rehabilitation objectives.

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

It does not specify the calculation methods to determine, for each viable technique, the required amount of lining or replacement pipe material needed to secure the desired performance of the rehabilitated pipeline.

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*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN