# INTERNATIONAL STANDARD

ISO 11299-1

Second edition 2018-10

# Plastics piping systems for renovation of underground gas supply networks —

Part 1: **General** 

Systèmes de canalisations en plastique pour la rénovation des réseaux enterrés de distribution de gaz —

Partie 1: Généralités

# **Document Preview**

ISO 11299-1:2018



# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 11299-1:2018

https://standards.iteh.ai/catalog/standards/iso/195c1001-45cb-4893-ae79-2a8ca37386ad/iso-11299-1-2018



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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 CP 401 • Ch. de Blandonnet 8 CH-1214 Vernier, Geneva Phone: +41 22 749 01 11 Fax: +41 22 749 09 47 Email: copyright@iso.org Website: www.iso.org

Published in Switzerland

Co	Contents						
Fore	eword		v				
Intr	oductio	on	vi				
1	Scon	De	1				
2	-	Normative references					
3	Terms and definitions 3.1 General						
	3.1	Techniques					
	3.3	Characteristics					
	3.4	Materials					
	3.5	Product stages					
	3.6	Service conditions					
4	Symbols and abbreviated terms						
	4.1	Symbols					
	4.2	Abbreviated terms					
5	Pipes at the "M" stage						
	$5.\dot{1}$	Materials					
	5.2	General characteristics					
	5.3	Material characteristics	8				
	5.4	Geometric characteristics	8				
	5.5	Mechanical characteristics	8				
	5.6	Physical characteristics	8				
	5.7	Jointing	8				
	5.8	Marking	9				
6		5.8 Marking Fittings at the "M" stage Cument Preview					
	6.1	Materials					
	6.2	General characteristics					
	6.3	Material characteristics	9				
	0.4	Geometric characteristics 95c1001-45cb-4893-ae/9-2a8ca3/386ad/Iso-11299-1-20					
	6.5	Mechanical characteristics					
	6.6	Physical characteristics					
	6.7 6.8	Jointing Marking					
_							
7		illary components					
8	Fitness for purpose of the installed lining system at the "I" stage						
	8.1	Materials					
	8.2	General characteristics					
	8.3 8.4	Material characteristics					
	8.5	Mechanical characteristics					
	8.6	Physical characteristics					
	8.7	Additional characteristics					
	8.8	Sampling					
	8.9	Regional requirements for the installed lining system					
0		allation practice					
9	9.1	Preparatory work					
	9.1	1 3					
	9.2	Equipment					
	7.0	9.3.1 General					
		9.3.2 Inspection equipment					
		9.3.3 Lifting equipment					
	9.4	Installation	13				

# ISO 11299-1:2018(E)

		9.4.1	General	13	
		9.4.2	Safety precautions	13	
		9.4.3	Simulated installations	13	
	9.5	Proces	s-related inspection and testing	13	
	9.6		termination		
	9.7		Reconnection to the existing pipeline system		
	9.8		nspection and testing		
	9.9		nentation		
Bibliography					

# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 11299-1:2018

## 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 <a href="www.iso.org/directives">www.iso.org/directives</a>).

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 <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

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: <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

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*.

This second edition cancels and replaces the first edition (ISO 11299-1:2011), which has been technically revised. ISO 11299-1:2018

The main changes compared to the previous edition are as follows: 2a8ca37386ad/so-11299-1-2018

<u>Clauses 2, 3.1, 3.2, 3.3, 4.2, and 8.9, and Figures 1</u> and <u>2</u> have been technically revised.

A list of all parts in the ISO 11299 series can be found on the ISO website.

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 <a href="https://www.iso.org/members.html">www.iso.org/members.html</a>.

# Introduction

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

- ISO 11296, Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks;
- 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 (this series of standards).

These System Standards 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 plastics piping system components "as manufactured".

Each of the System Standards comprises a:

— Part 1: General (this document)

and all applicable renovation technique family-related parts, which for gas supply networks include or potentially include the following:

- Part 2: Lining with continuous pipes;
- Part 3: Lining with close-fit pipes;
- Part 4: Lining with cured-in-place pipes;
- Part 6: Lining with adhesive-backed hoses; 195c1001-45cb-4893-ac79-2a8ca37386ad/iso-11299-1-2018
- Part 11: Lining with inserted hoses.

The requirements for any given renovation technique family are specified in Part 1, applied in conjunction with the relevant other part. For example, this document and ISO 11299-3 specify the requirements relating to lining with close-fit 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 of ISO 11299, in order to facilitate direct comparisons across renovation technique families.

<u>Figure 1</u> shows the common part and clause structure and the relationship between ISO 11299 and the System Standards for other application areas.

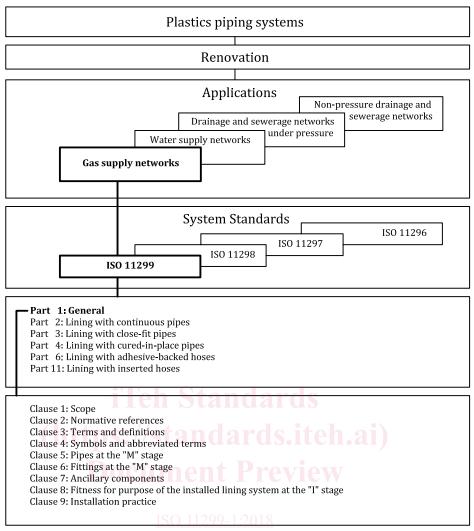


Figure 1 — Format of the Renovation System Standards

# iTeh Standards (https://standards.iteh.ai) Document Preview

ISO 11299-1:2018

# Plastics piping systems for renovation of underground gas supply networks —

# Part 1: **General**

# 1 Scope

This document specifies the requirements and test methods for plastics piping systems intended to be used for the renovation of underground gas supply networks. It is applicable to pipes and fittings, as manufactured, as well as to the installed lining system. It is not applicable to the existing pipeline or any sprayed coatings or annular filler.

This document gives the general requirements common to all relevant renovation techniques.

### 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 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 12007-1, Gas infrastructure — Pipelines for maximum operating pressure up to and including 16 bar — General requirements

EN 12007-2, Gas Infrastructure — Pipelines for maximum operating pressure up to and including 16 bar — Specific functional requirements for polyethylene (MOP up to and including 10 bar)

EN 12007-4, Gas infrastructure — Pipelines for maximum operating pressure up to and including 16 bar — specific functional requirements for renovation

### 3 Terms and definitions

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

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

- IEC Electropedia: available at <a href="https://www.electropedia.org/">https://www.electropedia.org/</a>
- ISO Online browsing platform: available at <a href="https://www.iso.org/obp">https://www.iso.org/obp</a>

#### 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 systems, including renovation, repair and replacement

#### 3.1.3

#### renovation

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

#### 3.1.4

#### replacement

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

#### 3.1.5

#### maintenance

routine work undertaken to ensure the existing performance of an asset

#### 3.1.6

#### repair

rectification of local damage

#### 3.1.7

### lining pipe

pipe inserted for renovation purposes Teh Standards

#### 3.1.8

#### liner

3.1.9

lining pipe after installation

# ig pipe arter msta

# lining system

lining pipe and all relevant fittings for insertion into an existing pipeline for the purposes of renovation

## 3.1.10s://standards.iteh.ai/catalog/standards/iso/195c1001-45cb-4893-ae79-2a8ca37386ad/iso-11299-1-2018

#### renovated pipeline system

existing pipeline system plus the installed lining system used to renovate it, as well as any grout or other annular filling material used

#### 3.1.11

#### characteristic

property, dimension or other feature of a material or component

#### 3.1.12

#### declared value

limiting value of a characteristic declared in advance by the lining system supplier, which becomes the requirement for the purposes of assessment of conformity

#### 3.1.13

#### annular filler

material for grouting annular space between existing pipeline and lining system

#### 3.1.14

#### grouting

process of filling voids around the lining system