



SLOVENSKI STANDARD
SIST-TS CEN ISO/TS 23818-1:2021

01-januar-2021

Ugotavljanje skladnosti cevnih sistemov iz polimernih materialov za obnovo obstoječih cevovodov - 1. del: Polietilen (PE) (ISO/TS 23818-1:2020)

Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines - Part 1: Polyethylene (PE) material (ISO/TS 23818-1:2020)

Konformitätsbewertung von Kunststoffrohrleitungssystemen zur Sanierung von bestehenden Rohrleitungen - Teil 1: Polyethylen (PE) (ISO/TS 23818-1:2020)

L'évaluation de la conformité des systèmes de canalisations en plastique destinés à la réhabilitation des réseaux existantes - Partie 1: Matériau Polyéthylène (PE) (ISO/TS 23818-1:2020)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

Ta slovenski standard je istoveten z: CEN ISO/TS 23818-1:2020

ICS:

23.040.20	Cevi iz polimernih materialov	Plastics pipes
83.140.40	Gumene cevi	Hoses

SIST-TS CEN ISO/TS 23818-1:2021 **en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN ISO/TS 23818-1

November 2020

ICS 23.040.20

English Version

**Assessment of conformity of plastics piping systems for
the rehabilitation of existing pipelines - Part 1:
Polyethylene (PE) material (ISO/TS 23818-1:2020)**

L'évaluation de la conformité des systèmes de
canalisations en plastique destinés à la réhabilitation
des réseaux existants - Partie 1: Matériau Polyéthylène
(PE) (ISO/TS 23818-1:2020)

Konformitätsbewertung von
Kunststoffrohrleitungssystemen zur Sanierung von
bestehenden Rohrleitungen - Teil 1: Polyethylen (PE)
(ISO/TS 23818-1:2020)

This Technical Specification (CEN/TS) was approved by CEN on 9 November 2020 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)
<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

European foreword

The text of ISO/TS 23818-1:2020 has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 23818-1:2020 by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems" the secretariat of which is held by NEN.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/TS 23818-1:2020 has been approved by CEN as CEN ISO/TS 23818-1:2020 without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

TECHNICAL SPECIFICATION

ISO/TS 23818-1

First edition
2020-02

Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines —

Part 1: Polyethylene (PE) material

iTeh STANDARD PREVIEW
(standards.iteh.ai)
*L'évaluation de la conformité des systèmes de canalisations en
plastique destinés à la réhabilitation des réseaux existantes —
Partie 1: Matériau Polyéthylène (PE)*

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>



Reference number
ISO/TS 23818-1:2020(E)

© ISO 2020

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)
<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

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

Contents	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
3.1 Assessment of conformity.....	3
3.2 Rehabilitation general.....	6
4 Abbreviated terms	7
5 General	8
6 Testing and inspection	8
6.1 Grouping.....	8
6.1.1 General.....	8
6.1.2 Size groups.....	8
6.1.3 Fitting groups.....	9
6.2 Type testing.....	9
6.3 Batch release tests.....	10
6.4 Process verification tests.....	10
6.5 Audit tests.....	10
6.6 Indirect tests.....	10
6.7 Test records.....	11
Annex A (normative) Test procedures for plastics piping systems for the rehabilitation of networks for underground non-pressure drainage and sewerage	12
Annex B (normative) Test procedures for plastics piping systems for the rehabilitation of networks for drainage and sewerage under pressure, and for water and gas supply	20
Annex C (normative) Specification of new system (N), change in design (D), change in material (M) and extension of the product range (E)	37
Annex D (normative) Testing and inspection of fabricated fittings	38
Annex E (normative) Summary tables of scheme requirements	41
Bibliography	44

ISO/TS 23818-1:2020(E)

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

A list of all parts in the ISO/TS 23818 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 www.iso.org/members.html.

Introduction

System standards dealing with the following applications are either available or in preparation for pipeline rehabilitation:

- 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*;
- ISO 21225, *Plastics piping systems for the trenchless replacement of underground pipeline networks*.

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.

For the assessment of conformity, three Technical Specifications for pipes of distinct materials are applicable:

- ISO/TS 23818-1 (this document), *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 1: Polyethylene (PE) material*;
- ISO/TS 23818-2¹⁾, *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 2: Resin-fibre composite (RFC) material*;
- ISO/TS 23818-3²⁾, *Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines — Part 3: Unplasticized poly(vinyl chloride) (PVC-U) material*.

These three Technical Specifications cover the system standards, as presented in [Table 1](#).

1) Under preparation. Stage at the time of publication: ISO/WD TS 23818-2:2020.

2) Under preparation. Stage at the time of publication: ISO/WD TS 23818-3:2020

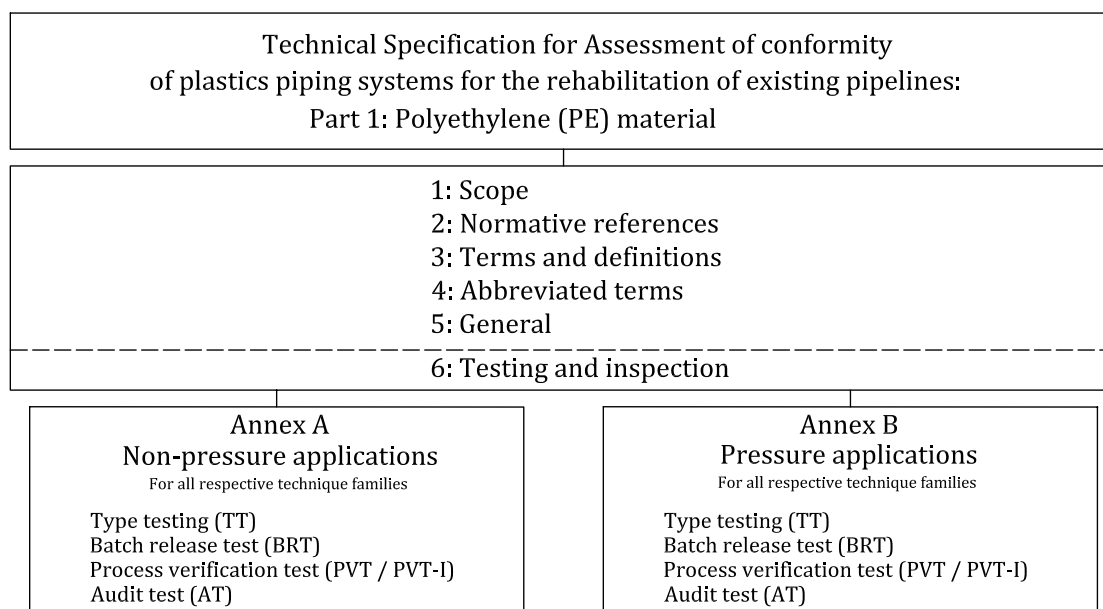
Table 1 — Structure of Technical Specifications for assessment of conformity

Technical Specification	Material	Technique	Application			
			Non-pressure drainage and sewerage networks	Drainage and sewerage networks under pressure	Water supply networks	Gas supply networks
ISO/TS 23818-1	PE	LINING WITH CONTINUOUS PIPES, CLOSE-FIT PIPES AND SPIRALLY WOUND PIPES	ISO 11296-2 ISO 11296-3 ISO 11296-7	ISO 11297-2 ISO 11297-3	ISO 11298-2 ISO 11298-3	ISO 11299-2 ISO 11299-3
		TRENCHLESS REPLACEMENT USING PIPE BURSTING, PIPE EXTRACTION, HORIZONTAL DRILLING AND IMPACT MOLING	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2	ISO 21225-1 ISO 21225-2
ISO/TS 23818-2 ^a	RFC	LINING WITH CURED-IN-PLACE PIPES (CIPP)	ISO 11296-4	ISO 11297-4	ISO 11298-4 ^a	—
ISO/TS 23818-3 ^a	PVC-U	LINING WITH CLOSE-FIT PIPES	ISO 11296-3	—	—	—
		AND SPIRALLY WOUND PIPES	ISO 11296-7	—	—	—

^a Under preparation. Stage at the time of publication: ISO/DIS 11298-4.

The format of the three Technical Specifications is in line with technical specifications for assessment of conformity to other system standards, apart from presenting the detailed requirements for inspection and testing in two annexes, for non-pressure applications and pressure applications (where applicable) respectively.

The format is schematically represented in Figure 1.

**Figure 1 — Format of the Technical Specifications for conformity assessment**

Figures 2 and 3 are intended to provide general information on the concept of testing and organisation of those tests used for the purpose of the assessment of conformity. For each type of test, i.e. type testing (TT), batch release test (BRT), process verification test (PVT), and audit test (AT), this document details the applicable characteristics to be assessed as well as the frequency and sampling of testing.

A typical scheme for the assessment of conformity of PE pipes, fittings, joints or assemblies by manufacturers is given in [Figure 2](#).

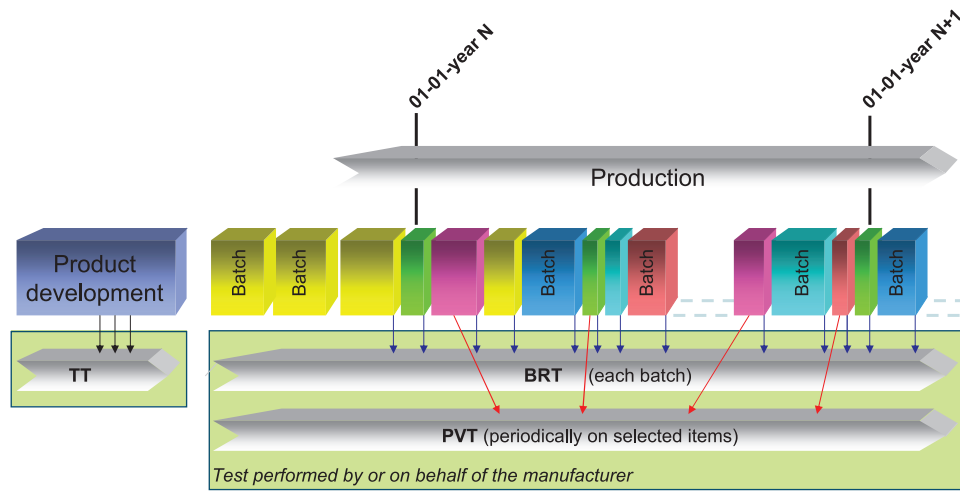


Figure 2 — Typical scheme for the assessment of conformity by a manufacturer

A typical scheme for the assessment of conformity of PE pipes, fittings, joints or assemblies by manufacturers, including certification, is given in [Figure 3](#).

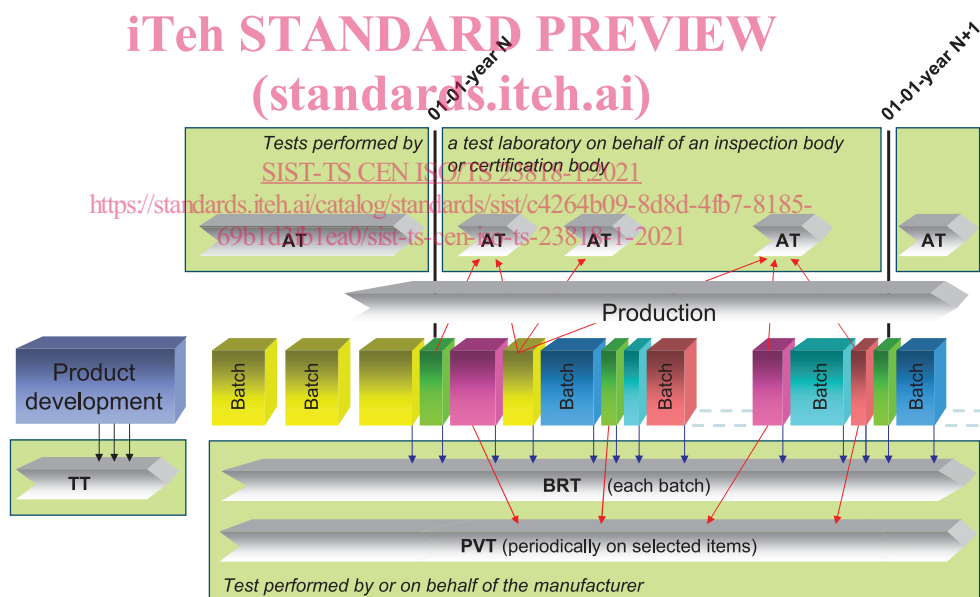


Figure 3 — Typical scheme for the assessment of conformity by a manufacturer, including certification

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 23818-1:2021](https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021)

<https://standards.iteh.ai/catalog/standards/sist/c4264b09-8d8d-4fb7-8185-69b1d3fb1ea0/sist-ts-cen-iso-ts-23818-1-2021>

Assessment of conformity of plastics piping systems for the rehabilitation of existing pipelines —

Part 1: Polyethylene (PE) material

1 Scope

This document provides a scheme for the assessment of conformity of PE products and assemblies for the rehabilitation of existing pipelines, in accordance with the applicable parts of ISO 11296, ISO 11297, ISO 11298, ISO 11299 and ISO 21225, and intended to be included in the manufacturer's quality plan as part of the quality management system and for the establishment of certification procedures.

NOTE In order to help the reader, summary tables of overall scheme requirements are provided in [Annex E](#).

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 4427-1, *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 4437-1:2014, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General*

ISO 4437-2:2014, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes*

ISO 4437-3:2014, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings*

ISO 6259-1, *Thermoplastics pipes — Determination of tensile properties — Part 1: General test method*

ISO 11296-1:2018, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 1: General*

ISO 11296-2:2018, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 2: Lining with continuous pipes*

ISO 11296-3:2018, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 3: Lining with close-fit pipes*

ISO 11296-7:2019, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 7: Lining with spirally-wound pipes*

ISO 11297-1:2018, *Plastics piping systems for renovation of underground drainage and sewerage networks under pressure — Part 1: General*