INTERNATIONAL STANDARD

**ISO 11296-4**

Second edition
2018-02

**AMENDMENT 1**
2021-02

# Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks —

## Part 4: Lining with cured-in-place pipes

## AMENDMENT 1: Updated definitions, marking requirements and procedure for alternative expression of flexural test results

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

*Systèmes de canalisations en plastique pour la rénovation des réseaux de branchements et de collecteurs d'assainissement enterrés sans pression —*

*Partie 4: Tubage continu par tubes polymérisés sur place*

*AMENDEMENT 1: Actualisation des définitions, des exigences de marquage, et de la procédure pour une autre expression des propriétés de flexion*

ISO 11296-4:2018/Amd 1:2021
https://standards.iteh.ai/catalog/standards/iso/e...ebd5-4de8-a49e-e80cda13d263/iso-11296-4-2018-amd-1-2021

Reference number
ISO 11296-4:2018/Amd.1:2021(E)

© ISO 2021

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

ISO 11296-4:2018/Amd 1:2021
https://standards.iteh.ai/catalog/standards/iso/e7f7829e-ebd5-4de8-a49e-c80cda13d263/iso-11296-4-2018-amd-1-2021

**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

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
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

# 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.

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

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,* 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).

ISO 11296-4:2018/Amd 1:2021
https://standards.iteh.ai/catalog/standards/iso/e7f7829e-ebd5-4de8-a49e-e80cda13d263/iso-11296-4-2018-amd-1-2021

A list of all parts in the ISO 11296 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.

© ISO 2021 – All rights reserved

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

ISO 11296-4:2018/Amd 1:2021
https://standards.iteh.ai/catalog/standards/iso/e7f7829e-ebd5-4de8-a49e-c80cda13d263/iso-11296-4-2018-amd-1-2021

# Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks —

## Part 4:
## Lining with cured-in-place pipes

## AMENDMENT 1: Updated definitions, marking requirements and procedure for alternative expression of flexural test results

*Normative references*

Replace the references to ISO 178:2010+A1:2013, ISO 7685:1998, ISO 10467:–[1)], ISO 10468 and ISO 14125:1998+A1:2011 with the following:

ISO 178:2019, *Plastics — Determination of flexural properties*

ISO 7685:2019, *Glass-reinforced thermosetting plastics (GRP) pipes — Determination of initial ring stiffness*

ISO 10467:2018, *Plastics piping systems for pressure and non-pressure drainage and sewerage — Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin*

ISO 10468, *Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the ring creep properties under wet or dry conditions*

ISO 14125:1998, *Fibre-reinforced plastic composites — Determination of flexural properties*

iTeh Standards
(https://standards.iteh.ai)
Document Preview
ISO 11296-4:2018/Amd 1:2021
https://standards.iteh.ai/catalog/standards/iso/e7f829e-ebd5-4de8-a49e-e80cda13d263/iso-11296-4-2018-amd-1-2021

Delete ISO 7684 from the list.

Delete footnote 1).

© ISO 2021 – All rights reserved

*Terms and definitions*

Replace 3.1.2, 3.1.3, 3.1.4, 3.1.12 and 3.1.15 with the following:

**3.1.2**
**carrier material**
porous component of the *lining tube* (3.1.11), which carries the liquid *resin system* (3.1.16) during insertion into the pipe being renovated and forms part of the installed lining system once the resin has been cured

**3.1.3**
**CIPP product**
cured-in-place pipe of a particular design, produced from a *lining tube* (3.1.11) of specified materials, with a wall structure which is uniquely defined for each diameter/wall thickness combination, and which is impregnated with a specific *resin system* (3.1.16) and installed by a specific process

**3.1.4**
**CIPP unit**
specific cured-in-place pipe produced from a continuous *lining tube* (3.1.11), which has been impregnated in one process and installed as a single length

**3.1.12**
**nominal CIPP "M" stage wall thickness**
one of a range of discrete *lining tube* (3.1.11) wall thicknesses dictated by the sum of the thicknesses of the individual layers of materials used for tube construction at the "M" stage, excluding any internal or external membranes

Note 1 to entry: This term is expressed using the symbol $e_{n,M}$ (see 4.1).

**3.1.15**
**reinforcement**
fibres incorporated in the *lining tube* (3.1.11) which enhance the dimensional stability of the lining tube and/or the structural properties of the cured *composite* (3.1.6)

Note 1 to entry: The reinforcement can be incorporated in the carrier material (3.1.1), constitute the carrier material, or can be a separate layer.

Add the following new term and definition after 3.1.21:

**3.1.22**
**nominal CIPP "I" stage wall thickness**
one of a range of discrete *CIPP product* (3.1.3) wall thicknesses at the "I" stage, dictated by the sum of the thicknesses of the individual layers of materials used for *lining tube* (3.1.11) construction, excluding any internal or external membranes

Note 1 to entry: This term is expressed using the symbol $e_{n,I}$ (see 4.1).

iTeh Standards
(https://standards.iteh.ai)
Document Preview
https://standards.iteh.ai/catalog/standards/sist/cda13d263/iso-11296-4-2018-amd-1-2021


© ISO 2021 – All rights reserved