Plastics piping systems for renovation of underground nonpressure drainage and sewerage networks - Part 4: Lining with cured-in-place pipes (ISO 11296-4:2009, corrected version 2010-06-01)

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11296-4:2011 sisaldab Euroopa standardi EN ISO 11296-4:2011 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11296-4:2011 consists of the English text of the European standard EN ISO 11296-4:2011.
Standard on kinnitatud Eesti Standardikeskuse 31.05.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.05.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 27.04.2011.	Date of Availability of the European standard text 27.04.2011.
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ICS 23.040.20, 23.040.45, 91.140.80, 93.030

EUROPEAN STANDARD

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EN ISO 11296-4

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English Version

Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 4: Lining with cured-in-place pipes (ISO 11296-4:2009, corrected version 2010-06-01)

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 (ISO 11296-4:2009, version corrigée 2010-06-01)

Kunststoff-Rohrleitungssysteme für die Renovierung von erdverlegten drucklosen Entwässerungsnetzen (Freispiegelleitungen) - Teil 4: Vor Ort härtendes Schlauch-Lining (ISO 11296-4:2009)

This European Standard was approved by CEN on 8 April 2011.

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Foreword

The text of ISO 11296-4:2009 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 EN ISO 11296-4:2011 by 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 October 2011, and conflicting national standards shall be withdrawn at the latest by October 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13566-4:2002.

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Endorsement notice

The text of ISO 11296-4:2009 has been approved by CEN as a EN ISO 11296-4:2011 without any modification.

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Introduction

The System Standard, of which this is part 4, specifies the requirements for plastics piping systems of various materials used for renovation of existing pipelines in a specified application area. System Standards for renovation specify procedures for the following applications:

— plastics piping systems for renovation of underground non-pressure drainage and sewerage networks;

— plastics piping systems for renovation of underground drainage and sewerage networks under pressure;

— plastics piping systems for renovation of underground water supply networks;

— plastics piping systems for renovation of underground gas supply networks.

These System Standards are distinguished from those for conventionally installed plastics piping systems because they set requirements for 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) and all applicable renovation technique family-related parts from the following:

— part 2: lining with continuous pipes;

— part 3: lining with close-fit pipes;

— part 4: lining with cured-in-place pipes;

— part 5: lining with discrete pipes;

— part 7: lining with spirally-wound pipes.

The requirements for any given renovation technique family are given in part 1, applied in conjunction with the other relevant part. For example, parts 1 and 2 specify the requirements relating to lining with continuous pipes. For complementary information, see ISO 11295. Not all technique families are applicable 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 to facilitate direct comparisons across renovation technique families.

Figure 1 gives the common structure and the relationship between ISO 11296 and the System Standards for other application areas.

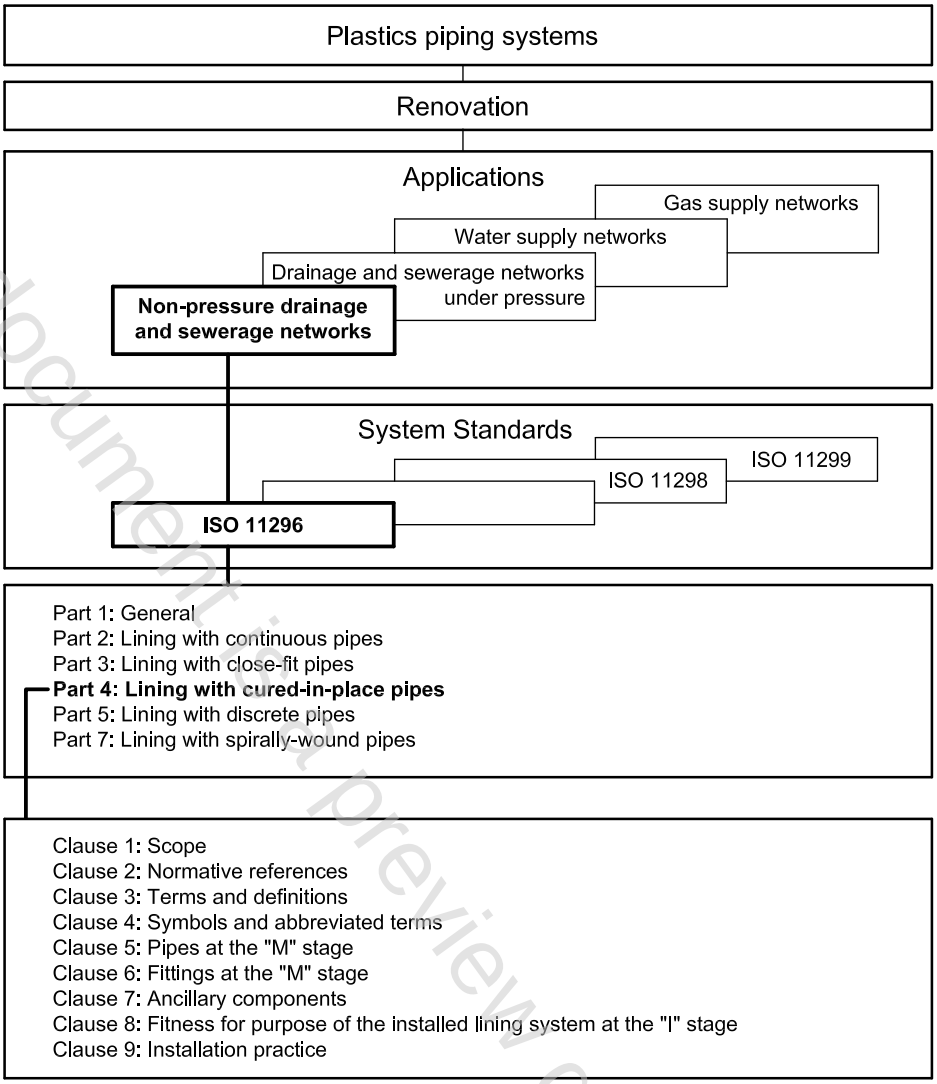

Figure 1 — Format of the renovation System Standards

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

Part 4: Lining with cured-in-place pipes

1 Scope

This part of ISO 11296, in conjunction with ISO 11296-1, specifies requirements and test methods for cured-in-place pipes and fittings used for the renovation of underground non-pressure drainage and sewerage networks.

It applies to the use of various thermosetting resin systems, in combination with compatible fibrous carrier materials and other process-related plastics components (see 5.1).

2 Normative references

The following referenced documents are indispensable for the application 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 75-2, *Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite*

ISO 178:2001, *Plastics — Determination of flexural properties*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 899-2:2003, *Plastics — Determination of creep behaviour — Part 2: Flexural creep by three-point loading*

ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions*

ISO 4435, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U)*

ISO 7684, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the creep factor under dry conditions*

ISO 7685, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of initial specific ring stiffness*

ISO 8513, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of longitudinal tensile properties*

ISO 8773, *Plastics piping systems for non-pressure underground drainage and sewerage — Polypropylene (PP)*

ISO 10928[1)], *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Methods for regression analysis and their use*

ISO 10952, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Determination of the resistance to chemical attack for the inside of a section in a deflected condition*

ISO 11296-1:—[2)], *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks — Part 1: General*

ISO 13002, *Carbon fibre — Designation system for filament yarns*

ISO 25780:—[3)], *Plastics piping systems for pressure and non-pressure water supply, irrigation, drainage or sewerage — Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin — Pipes with flexible joints intended to be installed using jacking techniques*

EN 14364:2006, *Plastics piping systems for drainage and sewerage with or without pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) — Specifications for pipes, fittings and joints*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11296-1 and the following apply.

3.1 General terms

3.1.1
carrier material
porous component of the liner, which carries the liquid resin system during insertion into the pipe being renovated and forms part of the installed lining system once the resin has been cured

3.1.2
CIPP product
cured-in-place pipe product
cured-in-place pipe of a particular design, produced from a liner 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 and installed by a specific process

3.1.3
CIPP unit
specific cured-in-place pipe produced from a continuous liner, which has been impregnated in one process and installed as a single length

3.1.4
close-fit
situation of the outside of the installed liner relative to the inside of the existing pipeline, which may either be an interference fit or include a small annular gap resulting from shrinkage and tolerances only

3.1.5
composite
combination of cured resin system, carrier material and/or reinforcement, excluding any internal or external membranes or any layer of excess neat resin

1) To be published.

2) To be published.

3) To be published.

