

Maa-alused surveta drenaazi ja kanalisatsiooni plasttorustikud. Plastifitseerimata polüvinüülkloriid (PVC-U), polüpropüleen (PP) ja polüetüleen (PE). Osa 2: Liiklusalas olevate hooldus- ja kontrollkaevude ning sügavate maa-aluste rajatiste spetsifikatsioonid

Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specifications for manholes and inspection chambers in traffic areas and deep underground installations

EESTI STANDARDI EESSÕNA	NATIONAL FOREWORD
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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 14.01.2009.	Date of Availability of the European standard is 14.01.2009.
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ICS 93.030

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English Version

Plastics piping systems for non-pressure underground drainage
and sewerage - Unplasticized poly(vinyl chloride) (PVC-U),
polypropylene (PP) and polyethylene (PE) - Part 2:
Specifications for manholes and inspection chambers in traffic
areas and deep underground installations

Systèmes de canalisations en plastique pour les
branchements et les collecteurs d'assainissement enterrés
sans pression - Poly(chlorure de vinyle) non plastifié (PVC-
U), polypropylène (PP) et polyéthylène (PE) - Partie 2:
Spécifications relatives aux regards et aux boîtes
d'inspection et de branchement dans les zones de
circulation et dans les réseaux enterrés profondément

Kunststoff-Rohrleitungssysteme für erdverlegte drucklose
Abwasserkanäle und -leitungen - Weichmacherfreies
Polyvinylchlorid (PVC-U), Polypropylen (PP) und
Polyethylen (PE) - Teil 2: Anforderungen an
Einsteigschächte und Kontrollschächte für Verkehrsflächen
und tiefe Erdverlegung

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Foreword

This document (EN 13598-2:2009) has been prepared 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 July 2009, and conflicting national standards shall be withdrawn at the latest by July 2009.

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 European standard is a supplementary standard for System Standards for plastics piping systems of a particular material for a specified application. There are a number of such System Standards.

System Standards are based on the results of the work being undertaken in ISO/TC 138 "*Plastics pipes, fittings and valves for the transport of fluids*", which is a Technical Committee of the International Organisation for Standardisation (ISO).

They are supported by separate standards on test methods and by European Standards for thermoplastic underground drainage and sewerage systems, to which references are made throughout the System Standard.

The System Standards are consistent with general standards on functional requirements and on recommended practice for installation.

This European Standard consists of the following parts under the general title *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)*.

- *Part 1: Specification for ancillary fittings including shallow inspection chambers*
- *Part 2: Specifications for manholes and inspection chambers in traffic areas and deep underground installation* (this standard)
- *Part 3: Assessment of conformity* (CEN/TS under preparation)

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the definitions and requirements for buried manholes and inspection chambers installed to a maximum depth of 6 m from ground level to the invert of the main chamber and manufactured from unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP), polypropylene with mineral modifier (PP-MD) or polyethylene (PE). These products are intended for use in pedestrian or vehicular traffic areas and underground installations conforming to the general requirements given in EN 476 and are used outside the building structure (application area code "U"). They are therefore marked accordingly with a "U". Such products are also deemed to meet the requirements of EN 13598-1 for application area U without the need for further testing. If additionally marked application area D then these products must additionally be tested to show compliance to the elevated temperature cycling requirement of Clause 10 of EN 13598-1.

This European Standard is only applicable to those chamber / manhole items where the manufacturer has clearly stated in the documentation how the components shall be assembled to create a complete manhole or inspection chamber.

The inspection chambers covered by this European Standard comprise the following:

- inspection chambers providing access to the drainage or sewerage system by means of inspection and cleaning equipment.
- chambers, designated as manholes providing man access to the drainage or sewerage system.

The inspection chamber / manhole can be manufactured by various methods e.g. injection moulding, rotational moulding, low-pressure moulding or fabricated from components made in accordance with other standards.

The jointing of components can be achieved using:

- elastomeric ring seal joints;
- adhesive joints for PVC-U;
- welded joints for PVC-U, PP and PE;
- extrusion welding;
- mechanical jointing.

NOTE Both manholes and inspection chambers can be site assembled from different components, but can also be manufactured as a single unit. In either case, the following functional parts can be recognized:

- a) base (always present)
In case of a one-piece chamber or manhole, the base part ends at a distance of 300 mm measured from the top of the main channel;
- b) riser (depth dependent);
- c) telescopic part (design dependent);
- d) cone (dependent on the design of near surface components and their recommended installation);
- e) other near surface components

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.

EN 124:1994, *Gully tops and manhole tops for vehicular and pedestrian areas — Design requirements, type testing, marking, quality control*

EN 476:1997, *General requirements for components used in discharge pipes, drains and sewers for gravity systems*

EN 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber*

EN 681-2, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 2: Thermoplastic elastomers*

EN 681-3, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 3: Cellular materials of vulcanized rubber*

EN 681-4, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 4: Cast polyurethane sealing elements*

EN 728, *Plastics piping and ducting systems – Polyolefin pipes and fittings – Determination of oxidation induction time*

EN 744:1995, *Plastics piping and ducting systems — Thermoplastics pipes — Test method for resistance to external blows by the round-the-clock method*

EN 922, *Plastics piping and ducting systems — Pipes and fittings of unplasticized poly(vinyl chloride) (PVC-U) — Specimen preparation for determination of the viscosity number and calculation of the K-value*

EN 1277:2003, *Plastics piping systems — Thermoplastics piping systems for buried non-pressure applications — Test methods for leaktightness of elastomeric sealing ring type joints*

EN 1401-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system*

EN 1852-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Polypropylene (PP) — Part 1: Specifications for pipes, fittings and the system*

EN 12061, *Plastics piping systems — Thermoplastics fittings — Test method for impact resistance*

EN 12666-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Polyethylene (PE) — Part 1: Specifications for pipes, fittings and the system*

EN 13101:2002, *Steps for underground man entry chambers — Requirements, marking, testing and evaluation of conformity*

EN 13476-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 1: General requirements and performance characteristics*

EN 13476-2, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A*

EN 13476-3, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B*

EN 14396:2004, *Fixed ladders for manholes*

CEN/TS 14541, *Plastics pipes and fittings for non-pressure applications — Utilization of non-virgin PVC-U, PP and PE materials*

EN 14758-1, *Plastics piping systems for non-pressure underground drainage and sewerage — Polypropylene with mineral modifiers (PP-MD) — Part 1: Specifications for pipes, fittings and the system*

EN 14802:2005, *Plastics piping systems — Thermoplastics shafts or risers for inspection chambers and manholes — Determination of resistance against surface and traffic loading*

EN 14830, *Thermoplastics inspection chamber and manhole bases — Test methods for buckling resistance*

EN 14982, *Plastics piping and ducting systems — Thermoplastics shafts or risers for inspection chambers and manholes — Determination of ring stiffness*

EN ISO 580:2005, *Plastics piping and ducting systems. Injection-moulded thermoplastics fittings. Methods for visually assessing the effects of heating (ISO 580:2005)*

EN ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics (ISO 1043-1:2001)*

EN ISO 1133:2005, *Plastics — Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of the thermoplastics (ISO 1133:2005)*

EN ISO 1183-1, *Plastics — Methods for determining the density of non cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2004)*

EN ISO 1183-2, *Plastics — Methods for determining the density of non-cellular plastics — Part 2: Density gradient column method (ISO 1183-2:2004)*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126:2005)*

3 Terms, definitions, symbols and abbreviations

For the purposes of this document, the terms, definitions and abbreviations given in EN 1401-1, EN 1852-1, EN 12666-1, EN 13476-1, EN 13476-2, EN 13476-3, EN 14758-1, EN ISO 1043-1 and the following apply.

3.1 Terms and definitions

3.1.1

inspection chamber

drainage or sewerage fitting used to connect drainage or sewerage installations and/or to change the direction of drainage or sewerage runs, which terminates at ground level with a riser shaft of 200 mm minimum outer diameter and an inner diameter of less than 800 mm

NOTE 1 See also EN 476 for non-circular chambers.

NOTE 2 The termination at ground level permits the introduction of cleaning, inspection and test equipment and the removal of debris but does not provide access for personnel.