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**Cevni sistemi iz polimernih materialov za odpadno vodo in kanalizacijo, ki delujejo po težnostnem principu in so položeni v zemljo - Nemehčan polivinilklorid (PVC-U), polipropilen (PP) in polietilen (PE) - 1. del: Specifikacije za pomožne fitinge in plitve revizijske jaške**

Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 1: Specifications for ancillary fittings and shallow chambers

Kunststoff-Rohrleitungssysteme für erdverlegte drucklose Abwasserkanäle und leitungen - Weichmacherfreies Polyvinylchlorid (PVC-U), Polypropylen (PP) und Polyethylen (PE) - Teil 1: Anforderungen an Schächte mit geringer Einbautiefe und Zubehörteile

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 1 : Spécifications relatives aux raccords auxiliaires et aux boîtes de branchement peu profondes

**Ta slovenski standard je istoveten z: prEN 13598-1**

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93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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**Plastics piping systems for non-pressure underground  
drainage and sewerage - Unplasticized poly(vinyl chloride)  
(PVC-U), polypropylene (PP) and polyethylene (PE) - Part  
1: Specifications for ancillary fittings and shallow  
chambers**

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Polypropylen (PP) und Polyethylen (PE) - Teil 1:  
Anforderungen an Schächte mit geringer Einbautiefe  
und Zubehörteile

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 155.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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## prEN 13598-1:2018 (E)

### European foreword

This document (prEN 13598-1:2018) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13598-1:2010.

Compared to the previous version, the main changes are listed below:

- 1) test methods have been updated to the latest EN ISO standards where applicable;
- 2) the scope has been amended to clarify the products covered in this part and avoid confusion with the scope of part 2;
- 3) terms and definitions have been updated and also now include the product diagrams;
- 4) dimensional requirements have been updated and clarified;
- 5) the mechanical characteristics tables have been updated;
- 6) Annex A has been updated with requirements for the utilization of non-virgin materials for shallow chambers.

This document is part of a System Standard 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 Organization for Standardization (ISO).

They are supported by separate standards on test methods, 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.

EN 13598 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: Specifications for ancillary fittings and shallow chambers* (this document);
- *Part 2: Specifications for manholes and inspection chambers* (under revision);
- *Part 3: Guidance for assessment of conformity* (CEN/TS under revision).

## 1 Scope

This document specifies the definitions and requirements for ancillary fittings and shallow chambers installed underground in non-pressure drainage and sewerage systems and manufactured from unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP), polypropylene with mineral modifier (PP-MD) or polyethylene (PE) intended for use for:

- non-pressure underground drainage and sewerage outside the building structure (application area code “U”), and
- non-pressure underground drainage and sewerage for both buried in ground within the building structure (application area code “D”) and outside the building structure.

This is reflected in the marking of products by “U” and “UD”.

It also covers the jointing of the ancillary fittings and shallow chambers to the pipework system.

The ancillary fittings covered by this standard are the following:

- sealed access fittings;
- rodding point covers;
- rodding tees;
- mechanical saddles.

Ancillary fittings according to this document are intended for use in pedestrian or vehicular traffic areas.

Ancillary fittings can be installed to a maximum depth of 6,0 m from ground level, with the exception of rodding point covers.

Shallow chambers according to this document are intended for use in private drains located in pedestrian areas above the ground water table, to a maximum depth of 2,0 m from ground level to the invert of the main channel. This document covers shallow chambers with flow profile bases, and their joints to the piping system.

NOTE 1 EN 124 series and EN 1253-4 covers can be used for shallow chambers.

NOTE 2 Manholes and inspection chambers are specified in EN 13598-2.

Ancillary fittings and shallow chambers complying with EN13598-1 comply with the general requirements given in EN 476.

Ancillary fittings and shallow chambers can be manufactured by various methods e.g. injection moulding, rotational moulding, spiral winding or fabricated from components made to other standards.

NOTE 3 Products complying with this document can be used with pipes, fittings and other components conforming to any of the plastics products standards listed in Clause 2, provided their dimension comply with the requirements for joint dimensions given in Clause 7 and to the requirements of Table 6.

NOTE 4 Products complying with this document can be installed in underground applications without additional static calculation.

**prEN 13598-1:2018 (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.

EN 124 (series), *Gully tops and manhole tops for vehicular and pedestrian areas*

EN 295-3:2012, *Vitrified clay pipe systems for drains and sewers — Part 3: Test methods*

EN 476:2011, *General requirements for components used in drains and sewers*

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 1253 (series), *Gullies for buildings*

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 1905, *Plastics piping systems — Unplasticized poly(vinyl chloride) (PVC-U) pipes, fittings and material — Method for assessment of the PVC content based on total chlorine content*

EN 12099, *Plastics piping systems — Polyethylene piping materials and components — Determination of volatile content*

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 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*



prEN 13598-2, *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*

EN 14680, *Adhesives for non-pressure thermoplastics piping systems — Specifications*

EN 14814, *Adhesives for thermoplastic piping systems for fluids under pressure — Specifications*

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 15346:2014, *Plastics — Recycled plastics — Characterization of poly(vinyl chloride) (PVC) recyclates*

EN ISO 472, *Plastics — Vocabulary*

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

EN ISO 1133-1, *Plastics — Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics — Part 1: Standard method (ISO 1133-1)*

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)*

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

EN ISO 2507-1, *Thermoplastics pipes and fittings — Vicat softening temperature — Part 1: General test method (ISO 2507-1)*

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

EN ISO 3451-1, *Plastics — Determination of ash — Part 1: General methods (ISO 3451-1)*

EN ISO 3451-5, *Plastics — Determination of ash — Part 5: Poly(vinyl chloride) (ISO 3451-5)*

EN ISO 11357-6, *Plastics — Differential scanning calorimetry (DSC) — Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT) (ISO 11357-6)*

EN ISO 13229, *Thermoplastics piping systems for non-pressure applications — Unplasticized poly(vinyl chloride) (PVC-U) pipes and fittings — Determination of the viscosity number and K-value (ISO 13229:2010)*

EN ISO 13254, *Thermoplastics piping systems for non-pressure applications — Test method for watertightness (ISO 13254)*

EN ISO 13257:2017, *Thermoplastics piping systems for non-pressure applications — Test method for resistance to elevated temperature cycling (ISO 13257:2010)*

EN ISO 13259, *Thermoplastics piping systems for underground non-pressure applications — Test method for leaktightness of elastomeric sealing ring type joints (ISO 13259)*

EN ISO 13263, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics fittings — Test method for impact strength (ISO 13263)*

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EN ISO 13264, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics fittings — Test method for mechanical strength or flexibility of fabricated fittings (ISO 13264)*

prEN ISO 13268, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics shafts or risers for inspection chambers and manholes — Determination of ring stiffness (ISO 13268)*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN ISO 472, EN ISO 1043-1 and the following apply.

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

**3.1****private drains**

drainage system within the total ground area of a property not in municipal ownership

**3.2****sealed access fittings**

fitting that permits entry into the system for rodding or inspection and that has a sealed cover

Note 1 to entry: Figure 1 shows examples of sealed access fittings, other designs are possible which can be required to conform to national requirements and/or local practice.

**3.3****rodding point cover**

fitting installed at ground level with a removable cover that permits the introduction of equipment for inspection and the clearance of blockages

Note 1 to entry: Figure 2 shows examples of rodding point covers, other designs are possible which can be required to conform to national requirements and/or local practice.

**3.4****rodding tee**

fitting installed in a drainage or sewerage system that connects to a rodding point at ground level that permits the introduction of equipment for the clearance of blockages, and also equipment for the inspection of the connecting pipe work in one or more directions

Note 1 to entry: Rodding tees may be subject to national regulations and / or local provisions.

Note 2 to entry: Figure 3 shows an example of a rodding tee, other designs are possible which can be required to conform to national requirements and/or local practice.

**3.5****mechanical saddle**

fitting that enables a branch connection to be made to buried drainage/sewerage systems of larger diameter by cutting a hole in the larger pipe and is retained in position by mechanical means

Note 1 to entry: Figure 4 shows examples of mechanical saddles, other designs are possible which can be required to conform to national requirements and/or local practice.

Note 2 to entry: Preferred nominal angles for mechanical saddle branches are 45° and 90°.

### 3.6

#### **shallow chamber**

fitting that permits the introduction of cleaning and inspection equipment from surface level, but does not provide access for personnel and which terminates at ground level with a riser shaft of 180 mm minimum and inner diameter of less than 800 mm

Note 1 to entry: See also EN 476 for non-circular chambers.

Note 2 to entry: Shallow chambers are subject to national safety regulations and / or local provisions.

Note 3 to entry: Figure 5 shows examples of shallow chambers, other designs are possible which can be required to conform to national requirements and/or local practice.

### 3.7

#### **base**

bottom part of a shallow chamber, allowing direct connection to buried drain and including integrally formed channels with benching as appropriate

Note 1 to entry: In case of a one-piece shallow chamber, for testing purposes the base component ends at a distance of 300 mm measured from the top of the main channel. Above 300 mm the section should be considered as a riser and tested accordingly.

### 3.8

#### **fabricated fitting**

**fitting produced from pipe and/or from injection-moulded fittings by thermoforming, adhesive joint or welding**

Note 1 to entry: Fabricated fittings need an additional fabrication step.

### 3.9

#### **virgin material**

material in a form such as granules or powder that has not been subjected to use or processing other than that required for its manufacture and to which no reprocessed or recycled material has been added

Note 1 to entry: It is understood that the addition of additives such as stabilizers and pigments is still resulting into a virgin material

### 3.10

#### **own reprocessed material**

material prepared from unused products, including trimmings from the production, that will be reprocessed in a manufacturer's plant after having been previously processed by the same manufacturer

### 3.11

#### **recycled material**

material prepared from used thermoplastic products which have been cleaned and crushed or ground

### 3.12

#### **agreed specification**

specification of the relevant material characteristics agreed between the supplier of the non-virgin material and the manufacturer

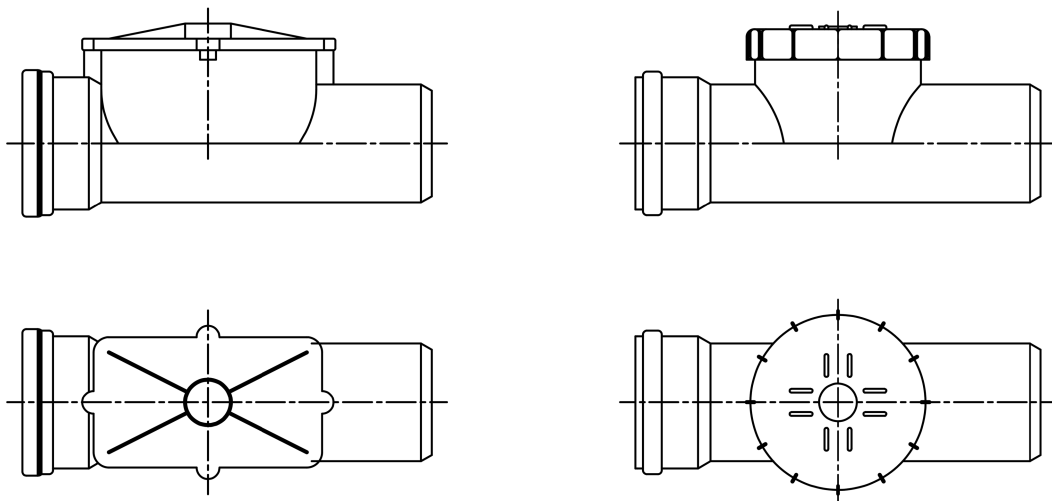


Figure 1 — Examples of sealed access fittings

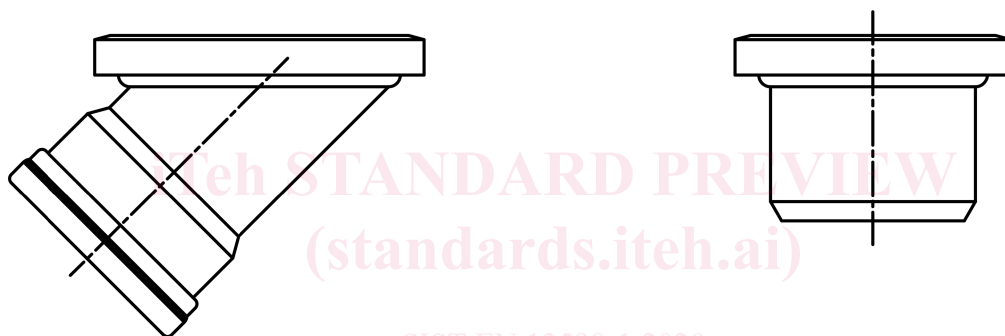
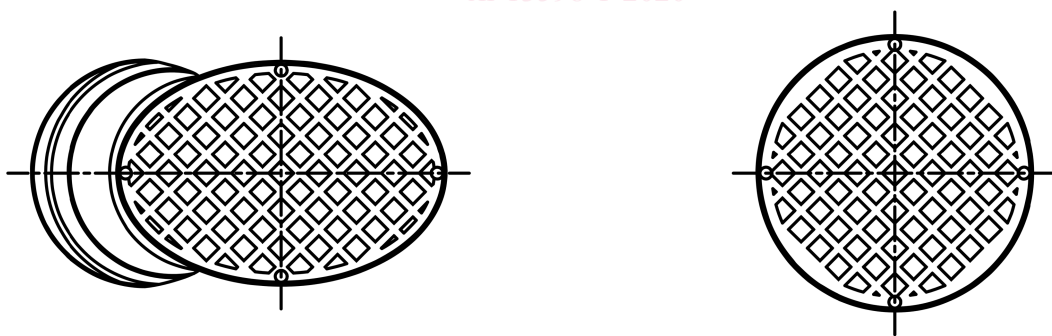


Figure 2 — Examples of rodding point covers



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