
Cevni sistemi iz polimernih materialov, ki delujejo po težnostnem principu in so položeni v zemljo, za transport in shranjevanje vode, ki ni namenjena pitju - Vstopni in revizijski jaški ter cestni odtoki za meteorno vodo iz neplastificiranega polivinilklorida(PVC-U), polipropilena (PP) in polietilena (PE) - 2. del: Specifikacija za cestne odtoke

Plastics piping systems for non-pressure underground conveyance and storage of non-potable water - Manholes, inspection chambers and road gullies for storm water systems made of unplasticized polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specification for road gullies

Kunststoff-Rohrleitungssysteme für die drucklose unterirdische Entwässerung und Speicherung für Nicht-Trinkwasser - Einsteigschächte, Kontrollschächte und Straßenabläufe für Regenwasserabflusssysteme aus weichmacherfreiem Polyvinylchlorid (PVC U), Polypropylen (PP) und Polyethylen (PE) - Teil 2: Anforderungen an Straßenabläufe

Systèmes de canalisations en plastique pour le transport et le stockage souterrains sans pression de l'eau non potable - Regards, boîtes d'inspection et de branchement et bouches d'égout pour les réseaux d'eaux pluviales en poly(chlorure de vinyle) non plastifié (PVC-U), en polypropylène (PP) et en polyéthylène (PE) - Partie 2 : Spécifications relatives aux bouches d'égout

Ta slovenski standard je istoveten z: prEN 17670-2

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<https://standards.iteh.ai/catalog/standards/sist/82905b71-9fe7-46ef-a996-7fabced94ff1/osist-pren-17670-2-2021>

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Plastics piping systems for non-pressure underground conveyance and storage of non-potable water - Manholes, inspection chambers and road gullies for storm water systems made of unplasticized polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specification for road gullies

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oSIST prEN 17670-2:2021

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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prEN 17670-2:2021 (E)**European foreword**

This document (prEN 17670-2:2021) 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 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 Organization for Standardization (ISO).

They are supported by separate standards on test methods, to which references are made throughout the System Standard.

Product complying with this standard are intended to collect and transfer surface water into a storm water or combined drainage system.

EN 17670 consists of the following parts under the general title *Plastics piping systems for non-pressure underground conveyance and storage of non-potable water — Manholes, inspection chambers and road gullies for storm water systems made of unplasticized polyvinyl chloride (PVC-U), polypropylene (PP) and polyethylene (PE)*:

- Part 1: Specifications for storm water manholes and inspection chambers (under development);
- Part 2: Specifications for storm water road gullies (this document);
- Part 3: Assessment of conformity (CEN/TS to be developed).

Introduction

Storm water road gullies have been used for many years and due to the increased requirements for surface water drainage, they are becoming more important as part of an integrated surface water management system.

The products covered by this document are intended for use as part of storm (surface) water management systems.

Storm water road gullies intended for full encapsulation in concrete are not covered by this document.

Infiltration gullies are not covered by this document.

Shallow chambers intended for use in foul water systems are specified in EN 13598-1.

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prEN 17670-2:2021 (E)**1 Scope**

This document specifies the definitions and requirements for unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP), polypropylene with mineral modifier (PP-MD) or polyethylene (PE) storm water road gullies intended for non-pressure use only in storm water and combined systems installed to a maximum depth of 4 m from ground level to the lowest point of the storm water road gully.

Storm water road gullies complying with this document are intended to be used in pedestrian or vehicular traffic areas outside the building structure.

NOTE 1 Products complying with this document can also be used in non-traffic areas.

NOTE 2 Storm water road gullies can be subject to national regulation which limit the maximum installation depth and / or local provisions. The installer checks for compliance prior to installation.

Storm water road gullies complying with this document are made from a prescribed set of components that are manufactured from unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP), polypropylene with mineral modifier (PP-MD) or polyethylene (PE) and assembled together.

Storm water road gullies complying with this document may be equipped with optional devices (e.g. removable sand or silt bucket, leaf separator etc.), however the performance of these optional devices is not covered within the scope of this document.

Storm water road gully components can be manufactured by various methods e.g. extrusion, injection moulding, rotational moulding, low-pressure moulding, blow moulding, thermoforming or fabricated.

NOTE 3 Products complying with this standard can be installed in underground applications without additional static calculation.

NOTE 4 The complete storm water road gully assembly can also include items non-plastic items (near surface or surface components for example) which are not covered by this document.

NOTE 5 The complete storm water road gully assembly can be supplied with covers, frame covers and gratings complying with the relevant part of EN 124 [1] which are not covered by this document. However, reference is made to this document for geometrical characteristics where applicable.

NOTE 6 Storm water road gullies can be site assembled from different components, but can also be manufactured as a single unit.

This document covers:

- storm water road gullies with or without sand / silt trap;
- storm water road gullies with or without water seal preventing odour release;
- storm water road gullies where the traffic load will or will not be carried by the complete gully (resp. “Direct loaded storm water gullies” or “Indirect loaded storm water gullies”).

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 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 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 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 13476-2, *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 13598-1, *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 including shallow chambers*
- EN 13598-2:2020, *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 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 ISO 580, *Plastics piping and ducting systems — Injection-moulded thermoplastics fittings — Methods for visually assessing the effects of heating (ISO 580)*
- 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)*

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EN ISO 1158, *Plastics — Vinyl chloride homopolymers and copolymers — Determination of chlorine content (ISO 1158)*

EN ISO 1183-1, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pyknometer 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 3127, *Thermoplastics pipes — Determination of resistance to external blows — Round-the-clock method (ISO 3127)*

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)*

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

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)*

ISO DIS 13266:2020, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics shafts or risers for inspection chambers and manholes — Determination of resistance against surface and traffic loading*

ISO 13267:2010, *Thermoplastics piping systems for non-pressure underground drainage and sewerage — Thermoplastics inspection chamber and manhole bases — Test methods for buckling resistance*

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*

3 Terms and definitions

For the purposes of this document, the terms, definitions and abbreviations given in 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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

storm water

water resulting from precipitation, melted snow and ice draining from roofs, roads, footpaths and all other ground surround

[SOURCE: ISO 20670:2018, 3.72 modified]

3.2

drainage

operation consisting of the removal of a fluid volume

[SOURCE: EN 16323:2014, definition 2.1.4.1]

3.3

combined system

drain and sewer system designed to carry both foul wastewater and surface water in the same pipeline(s)

[SOURCE: EN 16323:2014, definition 2.2.2.3]

3.4

storm water road gully

assembly to receive surface water from the ground surface through a top or grating for discharge into a drainage system. The stormwater road gully access dimension defines the nominal size

Note 1 to entry: Storm water road gullies are not intended for man entry.

Note 2 to entry: Storm water road gullies can be either direct loaded or indirect loaded.

3.5

direct loaded storm water road gully

DRG

storm water road gully where the traffic load is transferred by the body of the gully, to the soil

Note 1 to entry: An example of a DRG is shown in Figure 1.

Note 2 to entry: Typically, DRG's are shallow.

3.6

indirect loaded storm water road gully

IRG

storm water road gully where the traffic load is transferred to the soil by the near surface components

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Note 1 to entry: Examples of IRG's are shown in Figures 2, 3, 4, 5 and 6.

Note 2 to entry: IRG's can be either shallow (Figures 2, 3 and 6) or deep (Figure 5).

3.7**back inlet**

secondary inlet to a storm water road gully allowing connection to another storm water road gully

Note 1 to entry: Figure 6 refers.

3.8**near-surface components**

components intended to spread vehicular loading to the soil and can provide a seating for the gully top

3.9**storm water road gully base**

bottom part of a storm water road gully which allows connection to the drainage system, and can include a sand trap and a water seal. y

Note 1 to entry: In case of a one-piece DRG or IRG, for testing purposes, the storm water road gully base component ends at a maximum distance of 500 mm measured from the highest point of the water outlet. Above 500 mm the section should be considered as a storm water road gully riser and tested accordingly.

3.10**storm water road gully riser (standards.iteh.ai)**

vertical conduit between the stormwater road gully base and the near ground level or gully top

Note 1 to entry: In case of a one-piece DRG or IRG, for testing purposes the storm water road gully riser component starts at a distance of minimum 500 mm measured from the highest point of the water outlet. Below 500 mm the section should be considered as a storm water road gully base and tested accordingly.

3.11**gully top**

upper part of a storm water road gully consisting of a frame and grating

Note 1 to entry: This component is covered by EN 124-1 [1] and not by this document. Definitions for frame and grating can be found in EN 124-1 [1].

3.12**transition piece**

part of the stormwater road gully assembly allowing the connection to the gully top, in case of a change in geometry

Note 1 to entry: An example of a transition piece is shown in Figures 4 and 5.

3.13**telescopic adaptor**

part of the assembly on top of the riser of an IRG that allows adjustment of surface or the near surface components

Note 1 to entry: Telescopic adaptors allows accommodation of settlement during lifetime and eliminate the transmission of vehicular loading.

Note 2 to entry: The telescopic adaptor is often a pipe.

3.14**storm water road gully assembly**

component(s) collectively forming a storm water road gully

3.15**sand trap**

integral part of a storm water road gully which allows the separation and collection of sediment

Note 1 to entry: May also be referred to as a silt trap.

3.16**sand trap volume**

volume of sand that can be trapped by the sand trap in regular use

Note 1 to entry: The declared volume can never be higher than the volume of the storm water road gully below the lowest point of the outlet or the lowest point of the water seal if applicable.

Note 2 to entry: This definition excludes volumes provided by special features such as collection buckets or dirt pans.

3.17**depth of water seal**

h

effective height of water in the trap which prevents the passage of foul air and avoids floating debris entering the drainage system

Note 1 to entry: Some national regulation and/or local provision specify minimum depth of water seal.

Note 2 to entry: See Figures 1, 3, 5 and 6.

3.18**maximum height of groundwater above lowest point of the storm water road gully**

H_{gw}

height of water column above the lowest part of the storm water road gully, that the storm water road gully can withstand during use

3.19**optional device**

detachable feature which does not contribute to the structural performance of the storm water road gully

Note 1 to entry: Examples of optional device may be a silt or sand bucket or leaf separator.

3.20**factory fabricated component**

component produced from pipe and/or from injection-moulded fittings by thermoforming, adhesive joint, welding or mechanical jointing

3.21**virgin material**

plastics material in the form of pellets, granules, powder, floc, etc. that has not been subjected to use or processing other than required for its initial manufacture

Note 1 to entry: Does not contain any reworked plastic material and/or plastics recycle.

Note 2 to entry: Sometimes also referred to as "primary material" or "primary plastics feedstock".