
Cevni sistemi iz polimernih materialov za odpadno vodo in kanalizacijo, ki delujejo po težnostnem principu in so položeni v zemljo - Polipropilen (PP) - 1. del: Specifikacije za cevi, fiteinge in sistem

Plastics piping systems for non-pressure underground drains and sewers - Polypropylene (PP) - Part 1: Specifications for pipes, fittings and the system

Kunststoff-Rohrleitungssysteme für erdverlegte drucklose Abwasserkanäle und -leitungen - Polypropylen (PP) - Teil 1: Anforderungen an Rohre, Formstücke und das Rohrleitungssystem

Systèmes de canalisations en plastique pour les branchements et les collecteurs d'assainissement enterrés sans pression - Polypropylène (PP) - Partie 1 : Spécifications pour tubes, raccords et le système

Ta slovenski standard je istoveten z: prEN 1852-1

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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
drains and sewers - Polypropylene (PP) - Part 1:
Specifications for pipes, fittings and the system**

Systèmes de canalisations en plastique pour les
branchements et les collecteurs d'assainissement
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Kunststoff-Rohrleitungssysteme für erdverlegte
drucklose Abwasserkanäle und -leitungen -
Polypropylen (PP) - Teil 1: Anforderungen an Rohre,
Formstücke und das Rohrleitungssystem

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European foreword

This document (prEN 1852-1:2026) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

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

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1852-1:2018+A1:2022.

Compared to EN 1852-1:2018+A1:2022, the main changes introduced into prEN 1852-1:2026 are listed below:

- a) updating of the terms and definitions in line with EN 14541-1;
- b) “drainage and sewerage” changed into “drains and sewers” through the document;
- c) updated material clauses and annexes for the use of recyclates.

The System Standards are based on the results of the work 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).

The System Standards 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 1852 consists of the following parts, under the general title *Plastics piping systems for non-pressure underground drainage and sewerage – Polypropylene (PP)*:

- *Part 1: Specifications for pipes, fittings and the system* (the present standard)
- *Part 2: Guidance for the assessment of conformity* (CEN Technical Specification)

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

For guidance for installation, see CEN/TS 1046, and for guidance for structural design, see CEN/TS 15223:2025 [15].

1 Scope

This part of EN 1852 specifies definitions and requirements for solid wall pipes with smooth internal and external surfaces extruded from the same compound throughout the wall, fittings and the system of polypropylene (PP) piping systems in the field of non-pressure underground drains and sewers for wastewater.

NOTE 1 Products complying with this document can also be used in non-pressure underground drains and sewers for surface water.

This document is applicable to:

- solid wall pipes and fittings which are intended to be used buried underground outside the building structure reflected in the marking of the products by "U", and
- solid wall pipes and fittings which are intended to be used buried underground both outside (application area code "U") and within the building structure reflected in the marking of products by "UD".

This document specifies the test parameters for the test methods referred to in this document.

NOTE 2 Multilayer pipes with different compounds throughout the wall are covered by EN 13476-2 [1] (see also CEN ISO/TR 27165 [2]).

NOTE 3 Plastics piping systems made of PP with mineral modifiers (PP-MD) are covered by EN 14758-1 [3].

This document covers a range of nominal sizes, and pipe series and gives recommendations concerning colours.

NOTE 4 It is the responsibility of the purchaser or specifier to make the appropriate selection from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

This document is applicable to PP pipes and fittings, their joints and to joints with components of other plastics and non-plastics materials intended to be used for buried piping systems for non-pressure underground drains and sewers.

Fittings can be manufactured by injection-moulding or be fabricated from pipes, fittings and/or mouldings.

NOTE 5 Pipes, fittings and other components conforming to any of the plastics product standards listed in Annex C can be connected to pipes and fittings conforming to this document, when they conform to the requirements for joint dimensions given in Clause 6 and to the requirements of Table 14.

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 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 ISO 472, *Plastics — Vocabulary (ISO 472)*

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)*

EN ISO 1167-1, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 1: General method (ISO 1167-1)*

EN ISO 1167-2, *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces (ISO 1167-2)*

EN ISO 2505, *Thermoplastics pipes — Longitudinal reversion — Test method and parameters (ISO 2505)*

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 9969:2016, *Thermoplastics pipes — Determination of ring stiffness (ISO 9969:2016)*

EN ISO 11173, *Thermoplastics pipes — Determination of resistance to external blows — Staircase method (ISO 11173)*

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

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

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)*

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)*

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.

3.1

drain

pipeline, usually underground, designed to carry wastewater from a source to a sewer

[SOURCE: EN 16323:2014, 2.2.3.1]

3.2

sewer

pipeline, usually underground, designed to carry wastewater from more than one source

[SOURCE: EN 16323:2014, 2.2.3.12, modified - or other construction deleted]

3.3

wastewater

water composed of any combination of water discharged from domestic, industrial or commercial premises, surface run-off and accidentally any sewer infiltration water

[SOURCE: EN 16323:2014, 2.3.10.65, modified - sewage (deprecated) deleted]

3.4

surface water

water from precipitation, which has not seeped into the ground and is discharged to the drain or sewer system directly from the ground or from exterior building surfaces

[SOURCE: EN 16323:2014, 2.1.1.3]

3.5

application area code

code used in the marking of pipes and fittings to indicate the application area(s) for which they are intended, as follows:

U: for the area more than 1 m from the building to which the buried piping system is connected;

UD: for application area U and the area under and within 1 m from the building where the pipes and the fittings are buried in ground and are connected to the soil and waste discharge system of the building

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3.6

Geometrical definitions

3.6.1

nominal size

DN

numerical designation of the size of a component, which is a convenient round number approximately equal to the manufacturing dimension

Note 1 to entry: Nominal size is expressed in millimetres (mm).

3.6.2

nominal size

DN/OD

nominal size, related to the outside diameter

3.6.3

nominal outside diameter

d_n

specified outside diameter, assigned to a nominal size DN/OD

Note 1 to entry: Nominal size is expressed in millimetres (mm).

3.6.4

outside diameter

d_e

value of the measurement of the outside diameter through its cross section at any point of a pipe or spigot end, rounded up to the next greater 0,1 mm

3.6.5

mean outside diameter

d_{em}

value of the measurement of the outer circumference of a pipe or spigot end of a fitting in any cross section, divided by π ($\approx 3,142$), rounded to the next greater 0,1 mm

3.6.6

mean inside diameter of a socket

d_{sm}

arithmetical mean of a number of measurements of the inside diameter of a socket in the same cross section

3.6.7

wall thickness

e

value of the measurement of the wall thickness at any point around the circumference of a component

3.6.8

mean wall thickness

e_m

arithmetical mean of a number of measurements of the wall thickness, regularly spaced around the circumference and in the same cross section of a component, including the measured minimum and the measured maximum values of the wall thickness in that cross section

3.6.9**pipes series****S**

number for pipe designation (see ISO 4065)

Note 1 to entry: It is a dimensionless number.

3.6.10**standard dimension ratio****SDR**

numerical designation of a pipe series, which is a convenient round number approximately equal to the ratio of the nominal outside diameter, d_n , and the minimum wall thickness, e_{min}

3.6.11**solid wall pipe**

pipe with smooth internal and external surface with same compound/formulation throughout the wall

3.7**Mechanical definitions****3.7.1****nominal ring stiffness class****SN**

numerical designation of the ring stiffness of a pipe or fitting, which is a convenient round number, indicating the minimum required ring stiffness of the pipe or stiffness of the fitting

3.8**Material definitions****3.8.1****virgin material**

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

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

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

Note 3 to entry: It is understood that the addition of additives such as stabilizers and pigments is still resulting into a virgin (plastics) material.

[SOURCE: EN 14541-1:2022 [16]]

3.8.2**reworked material**

plastics material from rejected unused products or trimmings capable of being reclaimed within the same process that generated it

Note 1 to entry: Reworked material does not change the status of the feedstock.

Note 2 to entry: This definition does not cover the conditions for the use of reworked material-which can be found in the applicable product standard

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Note 3 to entry: Previously referred to as “own reprocessed material”.

[SOURCE: EN 14541-1:2022 [16]]

3.8.3

recyclate

plastics material resulting from the recycling of pre-consumer and post-consumer plastics products

Note 1 to entry: Also referred to as “secondary raw material” or “recycled plastics” or “regenerate”.

Note 2 to entry: Recycling can be chemical, physical or mechanical.

[SOURCE: EN 14541-1:2022 [16]]

3.8.4

pre-consumer material

plastics material diverted from the waste stream during a manufacturing process, excluding reworked (plastics) material

Note 1 to entry: Previously referred to as “post-industrial material”.

Note 2 to entry: Different categories of pre-consumer material may be considered in the applicable product standard.

[SOURCE: EN 14541-1:2022 [16]]

3.8.5

post-consumer material

plastics material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose

Note 1 to entry: This includes returns of material from the distribution chain.

Note 2 to entry: Different categories of post-consumer material may be considered in the applicable product standard.

[SOURCE: EN 14541-1:2022 [16]]

3.8.6

compound

clearly defined homogenous mixture of substances used for the manufacture of the product

Note 1 to entry: In general, the term “compound” is used for polyolefins and the term “formulation” for PVC.

Note 2 to entry: For metals and when dealing with water and food contact regulations the term “composition” is often used instead of compound/formulation.

[SOURCE: EN 14541-1:2022 [16]]

3.8.7

agreed specification

specification of the relevant material characteristics agreed between the supplier of the recyclate and the pipe and/or fitting manufacturer

Note 1 to entry: The agreed specification is often considered in the context of certification by a third party organization.