SLOVENSKI STANDARD
oSIST prEN 1852-1:2016

01-junij-2016

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, fitinge in sistem

Plastics piping systems for non-pressure underground drainage and sewerage - 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**

ICS:

23.040.05	Cevovodi za zunanje sisteme za odpadno vodo in njihovi deli	Pipeline and its parts for external sewage systems
93.030	Zunanji sistemi za odpadno vodo	External sewage systems

oSIST prEN 1852-1:2016 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 1852-1

April 2016

ICS 23.040.01; 93.030

Will supersede EN 1852-1:2009

English Version

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

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

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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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. prEN 1852-1:2016 E

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European foreword

This document (prEN 1852-1:2016) 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 1852-1:2009.

In this revised document, the following changes have been made:

— updating of normative references;

— thermal stability (OIT) requirement is made valid in general;

— two new dimensions have been introduced – 560 mm and 710 mm;

— Annex A for pipes S-series 11,2 has been deleted;

— a new Annex A for utilization of non-virgin PP material has been added.

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)

This part of EN 1852 includes Annex A (informative), "General characteristics of PP pipes and fittings" and Annex B (informative), "Product standards of components that can be connected to components conforming to this standard".

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

1 Scope

This part of EN 1852 specifies the requirements for solid wall pipes, fittings and the system of polypropylene (PP) piping systems 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".

This standard covers PP materials without mineral modifiers.

It also specifies the test parameters for the test methods referred to in this standard.

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

NOTE 1 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.

In conjunction with Part 2 of EN 1852, it 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 drainage and sewerage.

This standard is applicable to PP pipes and fittings with or without an integral socket.

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

Requirements and limiting values for application area code "D" are given in Table 4, Table 7 and Table 14.

NOTE 2 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 standard, 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 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 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 10204:2004, *Metallic products - Types of inspection documents*

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

EN ISO 472, *Plastics - Vocabulary (ISO 472)*

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)*

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

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

EN ISO 2505:2005, *Thermoplastics pipes - Longitudinal reversion - Test method and parameters (ISO 2505:2005)*

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 9969, *Thermoplastics pipes - Determination of ring stiffness (ISO 9969)*

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)*

ISO 3127, *Thermoplastics pipes - Determination of resistance to external blows - Round-the-clock method*

ISO 11173, *Thermoplastics pipes - Determination of resistance to external blows - Staircase method*

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

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

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

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

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

3 Terms, definitions, symbols and abbreviations

3.1 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.

3.1.1
application area code
code used in the marking of pipes and fittings to indicate the application area for which they are intended, as follows:

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

D: application area code for 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

Note 1 to entry: In code D application areas, the existence of hot water discharge in addition to the external forces from the surroundings is usual.

3.1.2 Geometrical definitions

3.1.2.1
nominal size DN/OD
numerical designation of the size of a component, which is a convenient round number approximately equal to the manufacturing dimension of the outside diameter, in millimetres

3.1.2.2
nominal outside diameter
d_n
specified outside diameter, in millimetres, assigned to a nominal size DN/OD

3.1.2.3
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 of a fitting, rounded up to the next greater 0,1 mm

3.1.2.4
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 (≈ 3,142), rounded to the next greater 0,1 mm

3.1.2.5
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

3.1.2.6
wall thickness
e
value of the measurement of the wall thickness at any point around the circumference of a component

3.1.2.7
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

3.1.2.8
pipes series
S
number for pipe designation (see ISO 4065:1996 [2])

3.1.2.9
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}

3.1.2.10
nominal ring stiffness
SN
numerical designation of the ring stiffness of a pipe or fitting, which is a convenient round number, relative to the determined stiffness in kilonewtons per square metre (kN/m²), indicating the minimum ring stiffness of a pipe or fitting

3.1.2.11
design length
Z
length of a fitting (e.g. the main pipe of a branch) excluding any spigot or socket length. In case of a change in direction (e.g. in case of a bend or the service pipe of a branch), it is the length from one end to the intersection of the straight axis of this end with the straight axis of the other end of the fitting, excluding any spigot or socket length (see the dimensions Z_1 and Z_2 in, e.g. Figure 7 and Figure 11)

3.1.3 Material definitions

3.1.3.1
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

3.1.3.2
own reprocessed material
material prepared from rejected unused pipes or fittings, including trimmings from the production of pipes or fittings, that will be reprocessed in a manufacturer's plant after having been previously processed by the same manufacturer by a process such as moulding or extrusion, and for which the complete formulation is known

3.1.3.3
external reprocessed material
material comprising either one of the following forms:

a) material from rejected unused pipes or fittings or trimmings there from, that will be reprocessed and that were originally processed by another manufacturer;

b) material from the production of unused PP products other than pipes and fittings, regardless of where they are manufactured

3.1.3.4
recycled material
material comprising either one of the following forms:

a) material from used pipes or fittings which have been cleaned and crushed or ground;

b) material from used PP products other than pipes or fittings which have been cleaned and crushed or ground

3.1.4
solid wall pipe
smooth internal and external surface with same compound/formulation throughout the wall

3.2 Symbols

A length of engagement

C depth of sealing zone

d_e outside diameter

d_{em} mean outside diameter

d_n nominal outside diameter

d_{sm} mean inside diameter of a socket

e wall thickness

e_m mean wall thickness

e_2 wall thickness of a socket

e_3 wall thickness in the groove area

l effective length of a pipe

L_1 length of spigot

M length of spigot of a plug

R radius of swept fittings

Z design length of (a part of) a fitting

α nominal angle of a fitting