

**Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Polypropylene (PP) - Part 1: Specifications for pipes, fittings and the system**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1451-1:2000 sisaldab Euroopa standardi EN 1451-1:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 17.03.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1451-1:2000 consists of the English text of the European standard EN 1451-1:1998.</p> <p>This document is endorsed on 17.03.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Polypropylene (PP) - Part 1: Specifications for pipes, fittings and the system.</p>	<p><b>Scope:</b> Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Polypropylene (PP) - Part 1: Specifications for pipes, fittings and the system.</p>
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Descriptors: Plastics, waste water pipes, specifications.

**English version**

**Plastics piping systems for soil and waste discharge  
(low and high temperature) within the building  
structure – Polypropylene (PP)**

**Part 1: Specifications for pipes, fittings and the systems**

Systèmes de canalisations en plastique pour l'évacuation des eaux-vannes et des eaux usées (à basse et à haute température) à l'intérieur de la structure des bâtiments – Polypropylène (PP) – Partie 1: Spécifications pour tubes, raccords ainsi que pour le système

Kunststoff-Rohrleitungssysteme zum Ableiten von Abwasser (niedriger und hoher Temperatur) innerhalb der Gebäudestruktur – Polypropylen (PP) – Teil 1: Anforderungen an Rohre, Formstücke und das Rohrleitungssystem

This European Standard was approved by CEN on 1998-06-01.

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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NNI.

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 June 1999, and conflicting national standards shall be withdrawn at the latest by June 1999.

This European Standard is one Part of EN 1451 for plastics piping systems in the field of soil and waste discharge (low and high temperature) within the building structure made of polypropylene (PP), which consists of the following parts:

Part 1: Specifications for pipes, fittings and the system  
Part 7: Guidance for the assessment of conformity.

Following a decision of CEN/TC 155 after the CEN enquiry, this part 1 is the result of merging of the following parts of the draft standard prEN 1451:

Part 1: General (published for CEN enquiry as prEN 1451-1);  
Part 2: Pipes (published for CEN enquiry as prEN 1451-2);  
Part 3: Fittings (published for CEN enquiry as prEN 1451-3);  
Part 5: Fitness for purpose of the system (published for CEN enquiry as prEN 1451-5).

Part 6: Recommended practice for installation (published for CEN enquiry as prEN 1451-6) is intended to be included in a merged document for the recommended practice for installation of plastics piping systems in the field of soil and waste discharge (low and high temperature) within the building structure. For this document the type of publication as European Prestandard (ENV) was approved by the CEN members.

For Part 7: Assessment of conformity (published for CEN enquiry as prEN 1451-7) the type of publication as European Prestandard (ENV) was approved by the CEN members.

This standard series is 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).

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

This Part of EN 1451 includes the following annex:

- Annex A (informative): General characteristics of PP pipes and fittings

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies the requirements for pipes, fittings and the system of polypropylene (PP) solid-wall piping systems in the field of soil and waste discharge (low and high temperature) inside buildings (marked with "B") and for soil and waste discharge systems for both inside buildings and buried in ground within the building structure (marked with "BD").

NOTE 1: The application area "inside buildings" according to this standard, applies to the interior area of the building only. The application area "within the building structure" conforms to the requirements for "inside buildings" according to prEN 12056-1.

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

This standard 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 the following purposes:

- a) soil and waste discharge pipework for the conveyance of domestic waste waters (low and high temperature);
- b) ventilation pipework associated with a);
- c) rainwater pipework within the building structure.

It applies to pipes and fittings, marked with "B", which are intended to be used inside buildings and outside buildings fixed onto the wall.

It applies to pipes and fittings, marked with "BD", which are intended to be used for both inside buildings and buried in ground within the building structure.

NOTE 2: Only components marked with "BD" are generally to be used buried in ground within the building structure; these are required to have a nominal ring stiffness of at least SN 4 and a nominal outside diameter equal to or greater than 75 mm.

NOTE 3: Pipes and fittings of the pipe series S 20 are intended to be used for application area "B" only.

This standard is applicable to PP pipes and fittings of the following types:

- plain-ended;
- with integral elastomeric ring seal socket;
- for butt fusion joints;

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

NOTE 4: Components conforming to any of the Product Standards listed in clause bibliography can be used with pipes and fittings conforming to this standard, provided they conform to the requirements for joint dimensions and to the functional requirements given in this standard.

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

NOTE 5: 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 codes.

## 2 Normative references

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

prEN 496

Plastics piping systems – Plastics pipes and fittings – Measurements of dimensions and visual inspection of surfaces

EN 681-1

Elastomeric seals – Materials requirements for pipe joint seals used in water and drainage applications – Part 1: Vulcanized rubber

prEN 681-2

Elastomeric seals – Materials requirements for pipe joint seals used in water and drainage applications – Part 2: Thermoplastic elastomers

EN 728

Plastics piping and ducting systems - Polyolefin pipes and fittings - Determination of oxidation induction time

EN 743 : 1994

Plastics piping and ducting systems – Thermoplastics pipes – Determination of the longitudinal reversion

EN 744 : 1995

Plastics piping and ducting systems – Thermoplastics pipes – Test method for resistance to external blows by the round-the-clock method

EN 763 : 1994

Plastics piping and ducting systems – Injection-moulded thermoplastics fittings – Test method for visually assessing effects of heating

EN 921

Plastics piping systems – Thermoplastics pipes – Determination of resistance to internal pressure at constant temperature

EN 1053

Plastics piping systems – Thermoplastics piping systems for non-pressure applications – Test method for watertightness

EN 1054

Plastics piping systems – Thermoplastics piping systems for soil and waste discharge – Test method for airtightness of joints

EN 1055 : 1996

Plastics piping systems – Thermoplastics piping systems for soil and waste discharge inside buildings – Test method for resistance to elevated temperature cycling

EN 1277 : 1996

Plastics piping systems – Thermoplastics piping systems for buried non-pressure applications – Test methods for leaktightness of elastomeric sealing ring type joints

EN 1411 : 1996

Plastics piping and ducting systems – Thermoplastics pipes – Determination of resistance to external blows by the staircase method

prEN 1451-7

Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure – Polypropylene (PP) – Part 7: Assessment of conformity

prEN 1989

Thermoplastics piping and ducting systems – Joints for buried non-pressure applications – Test method for long-term sealing performance of joints with thermoplastic elastomer (TPE) seals by estimating the sealing pressure

EN ISO 9969

Thermoplastics pipes – Determination of ring stiffness (ISO 9969 : 1994)

ISO 265-1 : 1988

Pipes and fittings of plastics materials – Fittings for domestic and industrial waste pipes – Basic dimensions: Metric series – Part 1: Unplasticized poly(vinyl chloride) (PVC-U)

ISO 472 : 1988

Plastics – Vocabulary

ISO 1043-1 : 1997

Plastics – Symbols – Part 1: Basic polymers and their special characteristics

ISO 1133 : 1997

Plastics – Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics

ISO 4065 : 1996

Thermoplastics pipes – Universal wall thickness table

ISO 4440-1 : 1994

Thermoplastics pipes and fittings – Determination of melt mass-flow rate – Part 1: Test method

ISO 4440-2 : 1994

Thermoplastics pipes and fittings – Determination of melt mass-flow rate – Part 2: Test conditions