

## **Ductile iron fittings for PVC-U or PE piping systems - Requirements and test methods**

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Requirements and test methods

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12842:2000 sisaldab Euroopa standardi EN 12842:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.09.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12842:2000 consists of the English text of the European standard EN 12842:2000.</p> <p>This document is endorsed on 12.09.2000 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></p> <p>This European Standard specifies the requirements and associated test methods applicable to ductile iron fittings and their joints to be used with polyvinyl chloride (PVC-U) pipes or polyethylene (PE) pipes, in conformity with EN 1452-1 to 7 and prEN 12201 - 1 to 7 respectively for the construction of pipelines:</p> <ul style="list-style-type: none"><li>- to convey water (e.g. potabe water);</li><li>- with or without pressure;</li><li>- to be installed below or above ground, inside or outside buildings.</li></ul>	<p><b>Scope:</b></p> <p>This European Standard specifies the requirements and associated test methods applicable to ductile iron fittings and their joints to be used with polyvinyl chloride (PVC-U) pipes or polyethylene (PE) pipes, in conformity with EN 1452-1 to 7 and prEN 12201 - 1 to 7 respectively for the construction of pipelines:</p> <ul style="list-style-type: none"><li>- to convey water (e.g. potabe water);</li><li>- with or without pressure;</li><li>- to be installed below or above ground, inside or outside buildings.</li></ul>
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**Võtmesõnad:**

**English version**

**Ductile iron fittings for PVC-U or PE piping systems**  
Requirements and test methods

Raccords en fonte ductile pour  
systèmes de canalisations en PVC-U  
ou en PE – Prescriptions et méthodes  
d'essai

Duktile Gussformstücke für PVC-U  
oder PE-Rohrleitungssysteme –  
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 2000-03-01.

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

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 203 "Cast iron pipes, fittings and their joints", the secretariat of which is held by AFNOR.

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 September 2000, and conflicting national standards shall be withdrawn at the latest by September 2000.

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.

This European Standard was prepared in co-operation with CEN/TC155 "Plastics piping systems".

Annex A of this European Standard is informative.

## Introduction

This standard is in conformity with the general requirements already established by CEN/TC 164 in the field of water supply.

In respect of potential adverse effects of the quality of water intended for human consumption, caused by the product covered by this standard :

- a) this standard provides no information as to whether the product may be used without restriction in any of the member states of the EU or EFTA ;
- b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

## 1 Scope

This European Standard specifies the requirements and associated test methods applicable to ductile iron fittings and their joints to be used with poly(vinyl chloride) (PVC-U) pipes or polyethylene (PE) pipes, in conformity with EN 1452-1 to 7 and prEN 12201-1 to 7 respectively, for the construction of pipelines :

- to convey water (e.g. potable water) ;
- with or without pressure ;
- to be installed below or above ground, inside or outside buildings.

This standard is not intended to cover sewerage applications, where additional requirements may be necessary.

This standard specifies requirements for materials, dimensions and tolerances, mechanical properties and standard coatings of ductile iron fittings. It also gives performance requirements for all components, including restrained and non-restrained flexible joints.

This standard covers fittings cast by any type of foundry process or manufactured by fabrication of cast components, as well as corresponding joints, in a size range extending from DN 40 to DN 700, to be used with pipes of external diameter from 40 mm to 710 mm.

This standard applies to fittings which are :

- manufactured with socketed ends (for push-in or mechanical joints), flanged ends and/or spigot ends for jointing by means of various types of gaskets which are not within the scope of this standard ;
- normally delivered externally and internally coated ;
- suitable for PE and PVC-U pipes with fluid temperatures between 0°C and 25°C, excluding frost, and for pressures up to 16 bar (PFA). For higher temperatures (up to 45°C for PVC-U or 40°C for PE) the PFA is derated as given in EN 1452 and prEN 12201.

This standard does not cover ductile iron fittings intended to be used with different pipe materials other than PVC-U and PE.

NOTE 1 Temperature limitations and pressure limitations are those coming from the PVC-U or PE pipes.

NOTE 2 In this standard, all pressures are relative gauge pressures, expressed in bars (100 kPa = 1 bar).

## 2 Normative references

This European 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 European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 545:1994, *Ductile iron, pipes, fittings, accessories and their joints for water pipelines - Requirements and test methods*.

EN 681-1:1996, *Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications - Part 1 : Vulcanised rubber*.

EN 805: 1999, *Water supply - Requirements for external systems and components*.

EN 1092-2:1997, *Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 2: Cast iron flanges*.

EN 1333:1996, *Pipework components - Definition and selection of PN*.

EN 1452 - 1 to 7 , *Plastics piping systems for water supply - Unplasticized poly(vinyl chloride) (PVC-U)*.

EN 1514- 1 to 4:1997, *Flanges and their joints - Dimensions of gaskets for PN-designated flanges*.

EN ISO 6708:1995, *Pipeworks components - Definition and selection of DN (nominal size) (ISO 6708:1995)*.

EN 10002-1:1990, *Metallic materials - Tensile testing - Part 1 : Method of test (at ambient temperature)*.

prEN 12201 - 1 to 7, *Plastics piping systems for water supply - Polyethylene (PE)*.

ISO 6506:1981, *Metallic materials - Hardness tests - Brinell test*.

## 3 Definitions

For the purposes of this standard, the following definitions apply.

### 3.1

#### **ductile iron**

Cast iron used for pipes, fittings and accessories in which graphite is present substantially in spheroidal form.

### 3.2

#### **fitting**

Casting other than a pipe which allows pipeline deviation, change of direction or bore. Examples are : bends, tees, couplings, tapers,...

### 3.3

#### **flange**

Flat circular end of a fitting or pipe extending perpendicular to its axis, with bolt holes equally spaced on a circle.

**NOTE** A flange may be fixed (e.g. integrally cast or welded-on) or adjustable ; an adjustable flange comprises a ring, in one or several parts assembled together, which bears on an end joint hub and can be freely rotated around the axis before jointing.

### 3.4

#### **spigot**

Male end of a pipe or fitting.