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Standards

Irish Standard  
I.S. EN ISO 1452-1:2009

Plastics piping systems for water supply  
and for buried and above-ground drainage  
and sewerage under pressure -  
Unplasticized poly(vinyl chloride) (PVC-U)  
- Part 1: General (ISO 1452-1:2009)

## I.S. EN ISO 1452-1:2009

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English Version

Plastics piping systems for water supply and for buried and  
above-ground drainage and sewerage under pressure -  
Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: General (ISO  
1452-1:2009)

Systèmes de canalisations en plastique pour l'alimentation  
en eau, pour branchements et collecteurs d'assainissement  
enterrés et aériens avec pression - Poly(chlorure de vinyle)  
non plastifié (PVC-U) - Partie 1: Généralités (ISO 1452-  
1:2009)

Kunststoff-Rohrleitungssysteme für die Wasserversorgung  
und für erdverlegte und nicht erdverlegte Entwässerungs-  
und Abwasserdruckleitungen - Weichmacherfreies  
Polyvinylchlorid (PVC-U) - Teil 1: Allgemeines (ISO 1452-  
1:2009)

This European Standard was approved by CEN on 4 November 2009.

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## **Foreword**

This document (EN ISO 1452-1:2009) has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids".

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of an identical text or by endorsement, at the latest by June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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

This document supersedes EN 1452-1:1999, EN 1456-1:2001.

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

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**INTERNATIONAL  
STANDARD**

**ISO  
1452-1**

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**Plastics piping systems for water supply  
and for buried and above-ground  
drainage and sewerage under pressure —  
Unplasticized poly(vinyl chloride)  
(PVC-U) —**

**Part 1:  
General**

*Systèmes de canalisations en plastique pour l'alimentation en eau, pour  
branchements et collecteurs d'assainissement enterrés et aériens avec  
pression — Poly(chlorure de vinyle) non plastifié (PVC-U) —*

*Partie 1: Généralités*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 1452-1 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 155, *Plastics piping systems and ducting systems*, in collaboration with ISO Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 2, *Plastics pipes and fittings for water supplies*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition cancels and replaces ISO 4422-1:1996, which has been technically revised.

ISO 1452 consists of the following parts, under the general title *Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure — Unplasticized poly(vinyl chloride) (PVC-U)*:

- *Part 1: General*
- *Part 2: Pipes*
- *Part 3: Fittings*
- *Part 4: Valves*
- *Part 5: Fitness for purpose of the system*

Guidance for the assessment of conformity is to form the subject of a part 7.

## **Introduction**

The System Standard, of which this is Part 1, specifies the requirements for a piping system and its components made from unplasticized poly(vinyl chloride) (PVC-U). The piping system is intended to be used for water supply and for buried and above-ground drainage and sewerage under pressure.

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the products covered by this part of ISO 1452, the following are relevant.

- a) This part of ISO 1452 provides no information as to whether or not the products can be used without restriction.
- b) Existing national regulations concerning the use and/or the characteristics of these products remain in force.

Requirements and test methods for components are specified in ISO 1452-2, ISO 1452-3 and ISO 1452-4. Characteristics for fitness for purpose (mainly for joints) are established in ISO 1452-5.

This part of ISO 1452 specifies the general aspects of PVC-U.

Guidance for installation is given in ISO/TR 4191<sup>[1]</sup>.

Guidance for assessment of conformity is provided in ENV 1452-7<sup>[2]</sup>.



# Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure — Unplasticized poly(vinyl chloride) (PVC-U) —

## Part 1: General

### 1 Scope

This part of ISO 1452 specifies the general aspects of unplasticized poly(vinyl chloride) (PVC-U) solid-wall piping systems intended for water supply and for buried and above-ground drainage and sewerage under pressure.

In conjunction with ISO 1452-2, ISO 1452-3, ISO 1452-4 and ISO 1452-5, it is applicable to PVC-U pipes, fittings, valves and ancillary equipment, their joints and to joints with components of other plastics and non-plastics materials intended to be used for the following:

- a) water mains and services buried in the ground;
- b) conveyance of water above ground for both outside and inside buildings;
- c) buried and above-ground drainage and sewerage under pressure.

It is applicable to piping systems intended for the supply of water under pressure up to and including 25 °C (cold water), intended for human consumption and for general purposes as well as for waste water under pressure.

This part of ISO 1452 is also applicable to components for the conveyance of water and waste water up to and including 45 °C. For temperatures between 25 °C and 45 °C, Figure A.1 of ISO 1452-2:2009 applies.

**NOTE** The producer and the end-user can come to agreement on the possibilities of use for temperatures above 45 °C on a case-by-case basis.

### 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.

ISO 472:1999, *Plastics — Vocabulary*

ISO 1043-1:2005, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

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

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