General requirements for components used in drains and sewers

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ICS 93.030

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 476

January 2011

ICS 93.030

Supersedes EN 1293:1999, EN 476:1997, EN 773:1999

English Version

General requirements for components used in drains and sewers

Exigences générales pour les composants utilisés pour les branchements et les collecteurs d'assainissement

Allgemeine Anforderungen an Bauteile für Abwasserleitungen und -kanäle

This European Standard was approved by CEN on 23 November 2010.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 476:2011) has been prepared by Technical Committee CEN/TC 165 “Waste water engineering”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by July 2011, and conflicting national standards shall be withdrawn at the latest by July 2011.

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 476:1997, EN 773:1999 and EN 1293:1999.

The specifications of this standard have been based on the requirements for wastewater systems specified in EN 752 and EN 12056.

This document is the result of merging EN 476, EN 773 and EN 1293.

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, Croatia, 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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1 Scope

This European Standard specifies general requirements for components inside and outside buildings (see EN 12056-1) such as pipes, fittings and manholes with their respective joints intended for use in discharge pipes, drains and sewers which operate as gravity systems allowing for a maximum pressure of 40 kPa.

It also specifies general requirements for components used in hydraulically and pneumatically pressurised discharge pipes, drains and sewers.

It provides basic specifications to be respected in material related product standards for these applications.

It is not applicable for the direct evaluation of products. It is applicable as a reference for drawing up a product specification, if there is no product standard available.

NOTE Where the term "inside buildings" is used in the context of components fixed inside buildings, it also includes discharge pipes and fittings fixed on external surfaces of buildings.

This European Standard covers components to be used in conveying in a satisfactory manner:

— domestic wastewater;

— rainwater and surface water; and

— other waste waters acceptable for discharge into the system (e.g. industrial wastewater).

This European Standard applies to components of circular and other cross sections.

This European Standard applies equally to components which are factory-made and to those constructed on site, where applicable.

This European Standard does not apply to components used for trenchless construction according to EN 14457 and for components used for renovation of drains and sewers according to EN 13380.

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 124, *Gully tops and manhole tops for vehicular and pedestrian areas — Design requirements, type testing, marking, quality control*

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 681-3, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 3: Cellular materials of vulcanized rubber*

EN 681-4, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 4: Cast polyurethane sealing elements*

EN 805:2000, *Water supply — Requirements for systems and components outside buildings*

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EN 1085:2007, *Wastewater treatment — Vocabulary*

EN 13101, *Steps for underground man entry chambers — Requirements, marking, testing and evaluation of conformity*

EN 14396, *Fixed ladders for manholes*

EN 14801, *Conditions for pressure classification of products for water and wastewater pipelines*

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1085:2007 and EN 805:2000 and the following apply.

3.1
hydraulically pressurised system
system where flow is caused by hydraulic pressure and where the pipe normally operates full

3.2
pneumatically pressurized system
system where flow is caused by pneumatic pressure which can be applied either as compressed air upstream or partial vacuum downstream and where the pipe normally operates full

3.3
nominal size
DN
numerical designation of size of component, which is a convenient integer approximately equal to a manufacturing dimension in millimetres and can apply to either the internal diameter (DN/ID) or the external diameter (DN/OD)

NOTE DN/OD pipes with solid or hollow spiral or annular profiled external surface and outside smooth spigot jointing dimensions, and with larger OD than the spigot may be designated by the spigot dimension.

3.4
external diameter
OD
mean external dimension of the pipe barrel at any cross section where for pipes with external profiles on the barrels, the external diameter is the maximum diameter when viewed in cross section

3.5
internal diameter
ID
mean internal dimension of the pipe barrel at any cross section

3.6
pipe barrel
cylindrical part of the pipe with a uniform longitudinal profile excluding socket and spigot

3.7
invert
lowest point of the internal surface of the barrel of a pipe or channel at any cross section

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