SLOVENSKI STANDARD
SIST EN 13380:2001

01-december-2001

Splošne zahteve za sestavne dele, ki se uporabljajo za obnovo in popravljanje sistemov za odvod odpadne vode in kanalizacijo zunaj stavb

General requirements for components used for renovation and repair of drain and sewer systems outside buildings

Allgemeine Anforderungen an Bauteile für Renovierung und Reparatur von Abwasserleitungen und -kanälen außerhalb von Gebäuden

Prescriptions générales pour les composants utilisés pour la rénovation et la réparation des branchements et des réseaux d'assainissement a l'extérieur des bâtiments

Ta slovenski standard je istoveten z: **EN 13380:2001**

ICS:

93.030	Zunanji sistemi za odpadno vodo	External sewage systems

SIST EN 13380:2001 **en**

EUROPEAN STANDARD

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English version

General requirements for components used for renovation and repair of drain and sewer systems outside buildings

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Allgemeine Anforderungen an Bauteile für Renovierung und Reparatur von Abwasserleitungen und -kanälen außerhalb von Gebäuden

This European Standard was approved by CEN on 23 March 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 of 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 November 2001, and conflicting national standards shall be withdrawn at the latest by November 2001.

This European Standard provides the basis for the preparation or revision of product standards for components and materials used for renovation and repair of drain and sewer systems (see clause 1 "Scope").

The annexes A, B and C are informative.

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.

Introduction

This European Standard was derived from EN 476. As far as possible the same wording has been used.

1 Scope

This European Standard specifies general requirements and general test methods for

- components such as pipes and fittings with their respective joints, manholes, inspection chambers and
- materials such as mortar and chemicals all intended to be used for repair and renovation of drain and sewer systems.

These drain and sewer systems generally operate as gravity drainage systems where any pressure likely to occur is a maximum of 40 kPa and which are generally buried.

This European Standard provides the general basis for the preparation and revision of volontary product standards. It is not applicable for evaluation of products.

It applies as a reference for drawing up a product specification, if there is no product standard available.

This European Standard includes quality control and optional certification requirements.

It applies to components those used in systems that convey in a satisfactory manner:

- domestic wastewater;
- rainwater and surface water; and
- other waste waters (e.g. industrial waste water) that will not damage the components.

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 manufactured on site, where applicable.

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 (including amendments).

EN 476	General requirements for components used in discharge pipes, drains and sewers for gravity systems
EN 752-1	Drain and sewer systems outside buildings – Part 1: Generalities and definitions
EN 752-5	Drain and sewer systems outside buildings - Part 5: Rehabilitation
EN 45011:1998	General requirements for bodies operating product certification systems (ISO/IEC Guide 65:1996)
EN 45012:1998	General requirements for bodies operating assessment and certification/registration of quality systems (ISO/IEC Guide 62:1996)
ISO 48 : 1994	Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD an 100 IRHD)

3 Terms, definitions, symbols and abbreviations

For the purposes of this European Standard the following terms and definitions apply

3.1
external diameter OD
mean external diameter of the pipe barrel at any cross section. For pipes with external profiles on the barrels, the external diameter is the maximum diameter when viewed in cross section
[EN 476]

3.2
factory production control
surveillance mode in which a manufacturer performs its own surveillance on the result of its production according to a set of rules formally specified in quality assurance or quality management provision
[EN 476]

3.3
flexible pipe
pipe, the load carrying capacity of which is limited by diametral deformation under load to the ultimate design criteria without breaking or overstressing
[EN 476]

3.4
gravity system
system where flow is caused by the force of gravity and where the pipe normally operates partially full
[EN 476]

3.5
grouting
filling the gap, if any, between the existing pipe an a new liner

3.6
internal diameter ID
mean internal diameter of the pipe barrel at any cross section
[EN 476]

3.7
joint
connection between the adjacent ends of two components including the means of sealing
[EN 476]

3.8
nominal size DN
numerical designation of size of component, which is a convenient integer approximately equal to a manufacturing dimension in mm. This can apply to either the internal diameter (DN/ID) or the external diameter (DN/OD)
[EN 476]

3.9
pipe barrel
cylindrical part of the pipe with a uniform cross section excluding socket and spigot
[EN 476]

3.10
proof load
specified test load which a component withstands where the related requirements of the product standard are met
[EN 476]

3.11
quality control system
organisational structure, responsibilities, procedures, processes and resources for implementing quality management

[EN 476]

3.12
rehabilitation
all measures for restoring or upgrading the performance of existing drain an sewer systems
[EN 752-1:1995]

3.13
renovation
work incorporating all or part of the original fabric of the drain or sewer by means of which its current performance is improved
[EN 752-5]

3.14
repair
rectification of local damage
[EN 752-5]

3.15
rigid pipe
pipe, the load carrying capacity of which is limited by breaking or overstressing, without significant deformation of its cross section
[EN 476]

3.16
ring stiffness
resistance of a pipe to diametrical deflection in response to external loading applied along one diametric plane is given as follows:

$$S = \frac{EI}{D_m^3}$$

where:

- ***S*** is the ring stiffness of the pipe, in kilonewtons per square metre;
- ***E*** is the modulus of elasticity in flexure in the circumferential direction, in kilonewtons per square metre;
- ***I*** is the second moment of area of the pipe wall in the longitudinal direction, per unit length, in metre to the fourth power per metre;
- D_m is the diameter of the neutral axis of the pipe wall, in metre.

3.17
semi-rigid pipe
pipe, the load carrying capacity of which is limited by diametral deformation or by breaking or overstressing
[EN 476]

3.18
specimen
selected component or part of a component or material that is to be used for testing in laboratory or in situ

3.19
surface water
water drained from the surface of buildings, structures or the ground
[EN 476]

3.20
ultimate load
load which causes failure as defined in product standards
[EN 476]

4 Installation techniques

Product standards for components used for repair and renovation shall specify the technique(s) and the environmental conditions for which the component is applicable ("fitness for installation").

Where grouting is needed it shall be specified on a case to case basis, considering the local conditions.

NOTE In annex A examples of rehabilitation techniques are given.

5 Product stages "M"-stage and "I"-stage

Product standards for components and materials used for repair and renovation shall specify the various properties of the components and materials in both stages with reference to an installation technique:

- "M"-stage: (as manufactured):
  related to a component before any subsequent site processing associated with a particular repair or renovation technique;
- "I"-stage (as installed):
  related to a component or material in its final configuration after any site processing associated with a particular repair or renovation technique.

  NOTE In annex B, examples of materials/components are given which "change" and "not change", their characteristics from "M"-stage to "I"-stage.

6 General requirements

6.1 General

Product standards for components and materials shall specify the requirements for both "M"-stage and "I"-stage, where applicable.

Product standards may include specifications which are more stringent, but not less stringent than those in clause 6**.**

With reference to the safety requirements in force at the place of renovation/repair the designer should check whether or not the minimum dimensions of manholes and inspection chambers as given in EN 476 may be reduced by the renovation/repair process.

6.2 Dimensions

Components may have different nominal sizes than those specified in EN 476 in order to be installed into drains or sewers which are to be renovated or repaired.

Product standards shall specify both for "M"-stage and "I"-stage, where applicable:

- external diameters, wall thicknesses and limit deviations;

- internal diameters, wall thicknesses and limit deviations;

For components designed for renovation/repair of pipelines with non circular (e.g. egg shaped) cross sections, the product standards shall specify the relevant geometrical characteristics, where applicable.