SLOVENSKI STANDARD
SIST EN 752:2017

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Nadomešča:

SIST EN 752:2009

Sistemi za odvod odpadne vode in kanalizacijo zunaj zgradb - Upravljanje sistema za kanalizacijo

Drain and sewer systems outside buildings - Sewer system management

Entwässerungssysteme außerhalb von Gebäuden - Kanalmanagement

Réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Gestion du réseau d'assainissement

Ta slovenski standard je istoveten z: EN 752:2017

ICS:

93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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EUROPEAN STANDARD

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Drain and sewer systems outside buildings - Sewer system management

Réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Gestion du réseau d'assainissement

Entwässerungssysteme außerhalb von Gebäuden - Kanalmanagement

This European Standard was approved by CEN on 27 February 2017.

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European foreword

This document (EN 752:2017) 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of an identical text or by endorsement, at the latest by October 2017, and conflicting national standards shall be withdrawn at the latest by October 2017.

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 752:2008.

The principal changes in this revision are as follows:

a) the terminology has been aligned with EN 16323:2014;

b) all the text relating to the determination of performance requirements and design criteria has been moved to Clause 5 as these are essentially part of this policy activity and not the design process;

c) Clause 5 has been updated to include references to show the links to the EU Water Framework Directive (2000/60/EC) together with its daughter directives and the EU Floods Directive (2007/60/EC);

d) Clause 6 has been updated to align with the latest revision of EN 13508-1 and some text that is duplicated in EN 13508-1 has been deleted;

e) Clause 6 has been updated to align with EN 14654-2;

f) contingency and emergency planning has been moved from the former Annex C to Clause 6 as it is part of the integrated sewer system planning process;

g) some additional text from the former Annex D has been added to Clause 7, this has allowed the former Annex D to be deleted as it largely duplicated Clause 7;

h) additional requirements have been added to Clause 8 on resilience of drain and sewer systems;

i) all physical design requirements in the former Clause 9 have been moved to a new Annex D;

j) all the hydraulic design requirements in the former Clause 9 have been moved to prEN 16933-2 to provide a more coherent narrative;

k) former Clause 11 (now Clause 10) has been updated to include requirements on dealing with major incidents;

l) the text of the former Clause 12 has been integrated into 6.5.5, 10.4 (now 9.4) or 11.2 (now 10.2) as appropriate;

m) the text from the former Annex A has been incorporated either in Clause 5 or Clause 7;

n) a new Annex B on rehabilitation approaches has been added;

o) the text from the former Annex C has been incorporated into Clause 6 (for planning activities), Clause 11 or the new Annex C;

p) the former Annex F has been deleted as this is superseded by the prEN 16932 series.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Drain and sewer systems are part of the overall wastewater system that provides a service to the community. This can be briefly described as:

— removal of wastewater from premises for public health and hygienic reasons;

— prevention of flooding in urbanized areas;

— protection of the environment.

The overall wastewater system has four successive functions:

— collection;

— transport;

— treatment;

— discharge.

Wastewater can, if necessary after treatment, be discharged to the environment or reused.

Collection and transport of wastewater is provided by drain and sewer systems.

Drain and sewer systems were installed because there was a need to remove the polluted water to prevent diseases.

Traditionally, drain and sewer systems were constructed to collect and transport all types of wastewater together irrespective of the initial source. This led to difficulties in handling the peak flows in times of heavy rainfall and to the introduction of combined sewer overflows, which discharged polluted water to surface receiving water bodies.

It was later recognized that separate systems, where foul wastewater was kept separate from runoff derived from surface water, would be an improvement over such combined systems.

Although many drain and sewer systems started out as combined systems there are strong arguments for considering the separation of foul wastewater and surface water. The pollutant effects are not the same and the separation of effluents allows for the different treatment for each element of wastewater, providing more environmentally friendly solutions.

This concept is included in the approach of integrated sewer management.

This European Standard provides a framework for the design, construction, maintenance operation and rehabilitation of drain and sewer systems outside buildings. This is illustrated in the upper part of the diagram in Figure 1. This European Standard is supported by more detailed standards for the investigation, design, construction, organization and control of drain and sewer systems.

Investigation and assessment standards include:

— EN 13508 (all parts), *Investigation and assessment of drain and sewer systems outside buildings*.

Design and construction standards include:

— prEN 16932 (all parts), *Drain and sewer systems outside buildings — Pumping systems*,

— prEN 16933-2, *Drain and sewer systems outside buildings — Design — Part 2: Hydraulic design*,

— EN 1295 (all parts), *Structural design of buried pipelines under various conditions of loading*,

— EN 1610, *Construction and testing of drains and sewers*,

— EN 12889, *Trenchless construction and testing of drains and sewers*,

— EN 15885, *Classification and characteristics of techniques for renovation and repair of drains and sewers*.

Management and control standards include:

— EN 14654 (all parts), *Management and control of operational activities in drain and sewer systems outside buildings*.

To support these detailed standards information comes from specifications produced by individual organizations for their own use. Product standards should also take into account the functional requirements in this European Standard through EN 476, EN 13380 and EN 14457.

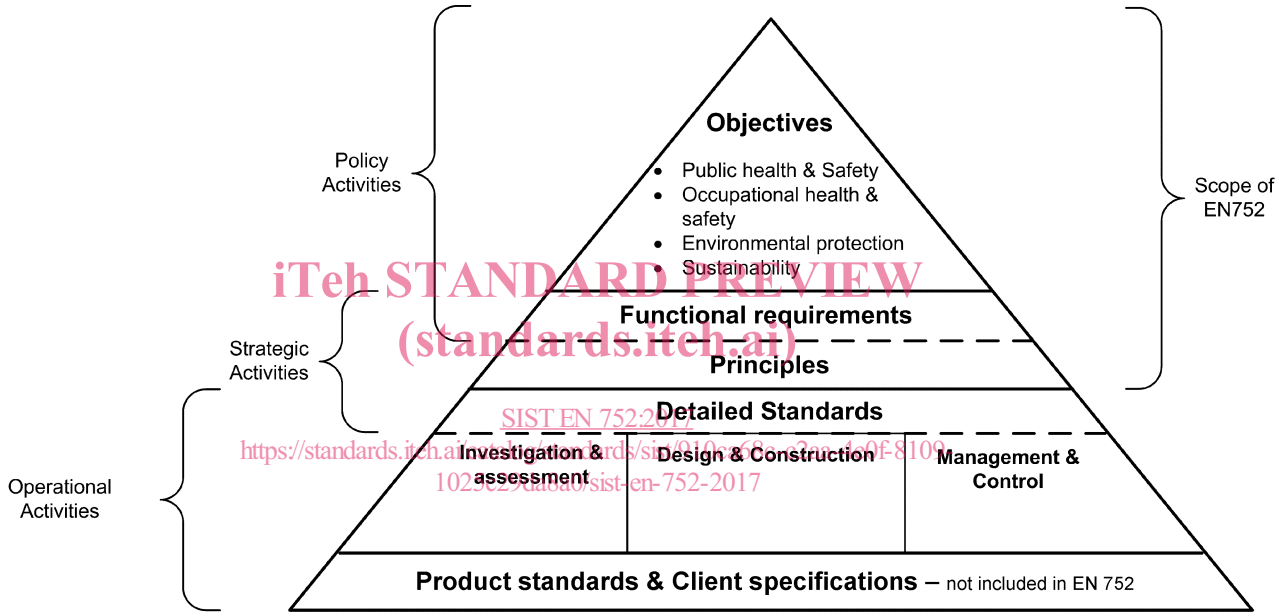

Figure 1 — Pyramid diagram

The EU Public Procurement Directive (2014/25/EU) governs the procurement of goods and services by public authorities. This includes procurement in relation to drain and sewer systems.

The Construction Products Regulation (No 305/2011) provides for uniform assessment methods of the performance of construction products which are set out in harmonized European Standards.

1 Scope

This European Standard specifies the objectives for drain and sewer systems outside buildings. It specifies the functional requirements for achieving these objectives and the principles for strategic and policy activities relating to planning, design, installation, operation, maintenance and rehabilitation.

It is applicable to drain and sewer systems from the point where wastewater leaves a building, roof drainage system, or paved area, to the point where it is discharged into a wastewater treatment plant or receiving water body.

Drains and sewers below buildings are included provided that they do not form part of the drainage system for the building.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 476, *General requirements for components used in drains and sewers*

EN 858-1, *Separator systems for light liquids (e.g. oil and petrol) — Part 1: Principles of product design, performance and testing, marking and quality control*

EN 858-2, *Separator systems for light liquids (e.g. oil and petrol) — Part 2: Selection of nominal size, installation, operation and maintenance*

EN 1295-1, *Structural design of buried pipelines under various conditions of loading — Part 1: General requirements*

EN 1610, *Construction and testing of drains and sewers*

EN 1825-1, *Grease separators — Part 1: Principles of design, performance and testing, marking and quality control*

EN 1825-2, *Grease separators — Part 2: Selection of nominal size, installation, operation and maintenance*

EN 1990:2002, *Eurocode — Basis of structural design*

EN 12889, *Trenchless construction and testing of drains and sewers*

EN 13508-1, *Investigation and assessment of drain and sewer systems outside buildings — Part 1: General Requirements*

EN 14654-1, *Management and control of operational activities in drain and sewer systems outside buildings — Part 1: Cleaning*

EN 16323:2014, *Glossary of wastewater engineering terms*

prEN 16932 (all parts), *Drain and sewer systems outside buildings — Pumping systems*

prEN 16933-2, *Drain and sewer systems outside buildings — Design — Part 2: Hydraulic design*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16323:2014 and the following apply.

Note 1 to entry: Certain key definitions from EN 16323:2014 have been repeated below for clarity. The following additional terms used in this European Standard are defined in EN 16323:2014:

aerobic,	anaerobic,	backdrop manhole,
biochemical oxygen demand,	catchment area,	collection tank,
combined sewer overflow,	combined system,	confined space,
dam board,	detention tank,	domestic wastewater,
drain,	dry weather flow,	exfiltration,
extraneous flow,	foul wastewater,	gradient,
gravity system,	hydro-biological stress,	industrial wastewater,
infiltration (see Figure 2),	inspection chamber,	inverted syphon,
jetting,	maintenance,	manhole,
non-domestic wastewater	outfall,	pumping station,
ramp manhole,	receiving water body,	rehabilitation,
relevant authority,	renovation, repair,	replacement,
retention period,	rising main,	rodding,
runoff coefficient,	self-cleansing,	self-purifying capacity,
separate system,	septic wastewater,	sewer, sewer system,
surcharge,	tank sewer,	time of concentration,
time of flow,	wastewater,	wastewater treatment plant,
winching.		

3.1
backwater level
elevation of the surface of the wastewater predicted or occurring in a drain and sewer system due to the hydraulic conditions downstream

3.2
design working life
assumed period for which a structure or part of it is to be used for its intended purpose with anticipated repair and maintenance but without renovation or replacement being necessary

[SOURCE: EN 1990:2002, modified to provide consistency with the terminology in EN 16323]

3.3
expected frequency
average rate of occurrence of an event

Note 1 to entry: The expected frequency can be expressed as a return period (once in T years) or a probability of occurrence in any one year (1/T) (see return period 3.11).

3.4
flooding
condition where water overflows onto a surface or enters a building where it is not intended

3.5
flushing
use of a temporary substantially increased flow to facilitate removal of obstructions or sediments from drains or sewers

3.6
integrated water policies
co-ordinated policies for the management of all bodies of water within a river basin including urban drainage systems within it

3.7
operations
actions taken in the course of normal functioning of drain and sewer systems

EXAMPLE Monitoring and regulation or diversion of wastewater.

3.8
pumping installation
pumping station together with any associated rising main(s)

3.9
rainfall intensity
depth of rain falling in unit time, or volume of rain falling in unit time per unit area

3.10
rainwater
water arising from atmospheric precipitation, which has not yet collected matter from the surface

Note 1 to entry: See Figure 2.

[SOURCE: EN 16323:2014, 2.1.1.1]

3.11
return period
expression of the expected frequency of an event expressed as the average recurrence interval between the events equalling or exceeding a specified magnitude (see expected frequency 3.3)

Note 1 to entry: The probability that an event of a certain return period being exceeded in any one year period is the inverse of that return period measured in years.

3.12
runoff
water from precipitation that flows off a surface to reach a drain, sewer or receiving water

Note 1 to entry: See Figure 2.

[SOURCE: EN 16323:2014, 2.1.1.2]

3.13
sewer flooding
condition where wastewater escapes from or cannot enter a drain and sewer system and either lies on the surface or enters buildings

3.14
structural condition
state of a drain and sewer in matters relating to the integrity of its fabric

3.15
surface receiving water body
receiving water body that is on the surface of the ground (e.g. river, lake or sea)

Note 1 to entry: See Figure 2.

[SOURCE: EN 16323:2014, 2.1.3.7]

3.16
surface water
water from precipitation, which has not seeped into the ground and is discharged to the drain or sewer system directly from the ground or from exterior building surfaces

Note 1 to entry: See Figure 2.

[SOURCE: EN 16323:2014, 2.1.1.3]

3.17
urban drainage system
infrastructure for the management of wastewater and runoff in the built environment

3.18
drainage
<built environment> group of technologies techniques and actions to achieve satisfactory hygiene and public health relating to wastewater, including both foul wastewater and surface water

3.19
wastewater
water composed of any combination of water discharged from domestic, industrial or commercial premises, surface run-off and accidentally any sewer infiltration water

[SOURCE: EN 16323:2014, 2.3.10.65]

3.20
whole life cost
aggregate cost of a scheme over its design working life, being the sum of the construction, operating, maintenance and end of life costs all calculated at the same time base