SLOVENSKI STANDARD
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Sistemi za odvod odpadne vode in kanalizacijo zunaj stavb - Upravljanje in nadzor aktivnosti - 4. del: Kontrola vnosa pri uporabnikih

Drain and sewer systems outside buildings - Management and control of activities - Part 4: Control of inputs from users

Entwässerungssysteme außerhalb von Gebäuden - Management und Überwachung von Maßnahmen - Teil 4: Kontrolle von Einleitungen der Nutzer

Réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Gestion et contrôle des activités opérationnelles - Partie 4: Contrôle des intrants des usagers

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93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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Drain and sewer systems outside buildings - Management and control of activities - Part 4: Control of inputs from users

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European foreword

This document (EN 14654-4:2021) has been prepared by Technical Committee CEN/TC 165 “Wastewater 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of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

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

EN 14654 consists of the following parts, under the general title *Drain and sewer systems outside buildings — Management and control of activities*:

— *Part 1: General*;

— *Part 2: Rehabilitation;*

— *Part 3: Drain and sewer cleaning;*

— *Part 4: Control of inputs from users* (the present document).

Other parts, dealing with other activities, may be added later.

In drafting this part of EN 14654, account has been taken of other available standards, in particular EN 752, *Drain and sewer systems outside buildings* and EN 13508 *Investigation and assessment of drain and sewer systems outside buildings*.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document establishes requirements for the management and control of activities in drain and sewer systems outside buildings and specifies requirements for development and implementation of work programmes, and the selection of techniques.

This document together with EN 14654-1:2021 covers the control of inputs from users.

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 of the building.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 752:2017, *Drain and sewer systems outside buildings - Sewer system management*

EN 14654-1:2021, *Drain and sewer systems outside buildings - Management and control of operational activities - Part 1: General requirements*

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

EN 13508-2:2003+A1:2011, *Investigation and assessment of drain and sewer systems outside buildings – Part 2: Visual inspection coding system*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16323:2014, EN 752:2017 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

NOTE Certain key definitions from EN 16323:2014 have been repeated below for clarity. The following additional terms used in this document are defined in EN 16323:2014:

— drain;

— sewer system;

— receiving water body;

— wastewater treatment plant;

— sewer.

3.1
domestic wastewater
water polluted by the human life, including water discharged from kitchens, laundry rooms, lavatories, bathrooms, toilets and similar facilities

[SOURCE: EN 16323:2014, 2.1.2.3]

3.2
foul wastewater
wastewater comprising domestic wastewater and/or industrial wastewater

[SOURCE: EN 16323:2014, 2.1.2.6]

3.3
industrial wastewater
wastewater discharge resulting from any industrial or commercial activity

[SOURCE: EN 16323:2014, 2.1.2.7]

3.4
input
any solid or liquid matter that is discharged into or otherwise enters a drain or sewer system including wastewater

3.5
non-domestic wastewater
water polluted by industrial, craft or commercial activity

[SOURCE: EN 16323:2014, 2.1.2.5]

3.6
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

[SOURCE: EN 16323:2014, 2.1.1.3]

3.7
user
any individual, domestic or non-domestic entity discharging into a drain or sewer system

3.8
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]

4 General

Foul drain and sewer systems are designed to receive inputs of domestic wastewater and some types of non-domestic wastewater (see EN 752:2017, 8.2).

Surface water systems are designed only to receive inputs of surface water (see EN 752:2017, 8.2).

Combined drain and sewer systems are designed to receive inputs of domestic wastewater, some types of non-domestic wastewater and a certain amount of surface water (see EN 752:2017, 8.2).

Most types of sewer systems are constructed for foul inputs consisting primarily of human waste, toilet paper, laundry water and kitchen washing up water. Increasingly foul inputs tend to include products that can be harmful to sewer systems. Examples of such generally harmful inputs are listed in Annex B.

Inputs of non-domestic wastewater to foul and combined drain and sewer systems are often controlled by formal agreements or regulations. Inputs of other sources of foul wastewater to foul and combined drain and sewer systems are not usually subject to these formal controls.

Controls are sometimes placed on the input of polluted surface water to surface water and combined drain and sewer systems.

The input of surface water to combined drain and sewer systems is sometimes subject to control to limit the amount of surface water discharged.

National and local regulations can specify controls on the inputs to drain and sewer systems.

The methods of control available to wastewater utilities depend on national and local regulations.

The control of inputs to drains and sewers can be carried out pro-actively, to prevent problems occurring, or reactively in response to problems that have occurred. When control is required before connecting to the network, appropriate access to the incoming discharge is necessary.

This document applies the process described in EN 14654-1:2021 for implementing activities to control of inputs in the integrated drain and sewer system management plan. This document shall be used in conjunction with EN 14654-1:2021.

National or local regulations or the relevant authority can:

a) prohibit certain inputs to certain types of drain or sewer system (e.g. discharge of surface water to foul drain or sewer systems or the discharge of foul wastewater to surface water drain or sewer systems);

b) prohibit inputs that contain certain specific substances (e.g. priority substances and certain other pollutants according to Annex II of Directive 2008/105/EC);

c) prohibit inputs that contain certain classes of substances (e.g. substances that could block drains or sewers, substances that could damage the components of the drain or sewer system, or the treatment process);

d) require some types of input (e.g. industrial wastewater inputs) to be regulated by a permit.

5 Integrated sewer system management planning

5.1 Introduction

An operations and maintenance plan (see EN 752:2017, 6.4.4.3), dealing with control of inputs should be in place for the drain and sewer system prior to carrying out major programmes. Activities for the control of inputs can be one aspect of the operations and maintenance plan, which is part of an integrated sewer system management plan. However, this is not always possible if works are required urgently (e.g. in response to a sewer failure).

5.2 Control of inputs from users

The aim of input control is to limit any adverse impact of inputs from users on:

a) structural integrity of the components of the sewer system or the wastewater treatment plant;

b) function, operation and the service life of the drain or sewer system;

c) function, operation and the service life of any mechanical or electrical equipment;

d) function, operation and the service life of the wastewater treatment plant;

e) the public, by causing nuisance;

f) the environment;

g) health and safety for users and for operating staff (toxic risks, explosives, etc.);

h) costs incurred by the wastewater system operator.

Criteria for determining the impacts of inputs from users on the wastewater system are given in Annex A.

6 Preparation of the input control programme

6.1 Introduction

The input control programme defines the approach to be taken to the control of each input either specifically for an individual input or generally for a defined class of inputs.

6.2 Review of the inputs control activities planning

A review should be undertaken of the control of inputs aspects of the operations and maintenance plan within the integrated sewer system management plan (see EN 752:2017, Clause 6).

6.3 Investigation

6.3.1 Introduction

The investigation shall review whether any inputs from users are adversely impacting or could adversely impact the system. Possible impacts are listed in 5.2.The locations of inputs having an adverse impact on the drain or sewer system should be identified based on:

1) investigation of non-domestic wastewater inputs into the drain and sewer system;

2) inspection of the drain and sewer system;

3) analysis of the causes of performance failures (e.g. sewer blockages);

4) review of the available information which may include the performance of similar systems elsewhere.

6.3.2 Review of previous investigations

The review should include:

a) drain and sewer system performance information to identify locations where there have been operational incidents (e.g. sewer blockages) that could have been caused by inputs;

b) existing visual inspection information to identify locations where there has been damage to the components of the drain or sewer system that could have been caused by inputs;

c) existing visual inspection information to identify locations where settled or attached deposits could be caused by inputs;

d) any sewer cleaning programme (see EN 14654-3:2021) to identify whether the components of inputs are likely to have been a significant contributory cause of the accumulated deposits;

e) wastewater treatment plant performance information to identify failures that could have been caused by inputs;

f) pollution incident reports to identify incidents that could have been caused by inputs;

g) industrial wastewater discharge records to identify the potential sources of damaging inputs.

6.3.3 Further investigations

Investigations should be carried out where further information is needed in order to produce the programme. These investigations can be either proactively in anticipation of an event, or reactively in response to it.

These can include:

a) visual inspection of drains, sewers (see EN 13508-2:2003+A1:2011) and wastewater treatment plants to identify damage or deposits;

b) investigation at the locations of sewer blockage incidents to identify whether the components of inputs continue to be a significant contributory cause of the future blockages;

c) investigation of the contents of blockages in drains, sewers and wastewater treatment plants to identify the nature and likely sources of the materials;

d) investigation of the causes of any unacceptable pollution resulting from inputs from surface water outfalls;

e) Investigation of the causes of any unacceptable pollution resulting from inputs from wastewater treatment plants;

f) Investigation of specific locations:

1) Premises which could give rise to unacceptable inputs (e.g. food service establishments, fuel stations, hospitals and care homes, campsites);

2) Sources of pollutants or solids that could be discharged into the systems by the users (e.g. car washing on roads or parking areas, fuel stations, construction sites);

3) Low points where surface water can collect or flood prone locations where users could lift foul sewer covers to relieve it;

g) Review of pumping times or flows to detect:

1) the presence of surface water in a foul wastewater drain;

2) unexpected flows in a surface water or combined drain.

6.4 Assessment

The assessment shall identify the locations where the performance of the system is being, or could be, unacceptably affected by inputs to the drain or sewer system.

When frequent problems occur, the nature of impacts may possibly be only one of the contributory factors. Other factors such as poor gradient, system defects, the fabric of the sewer etc. can cause problems. Where the consequences are severe, consideration should also be given to the feasibility of carrying out rehabilitation works to prevent or reduce the impact of inputs on the performance of the drain and sewer system.

Each input can be classified according to a grid that characterizes the nature of the problems encountered:

— Type 1: problems of industrial or commercial inputs requiring the installation of equipment and possibly permits and means of control;

— Type 2: user input problems that require information campaigns and possibly the mobilization of regulatory power;

— Type 3: Other problem not related to inputs from user.

The need for intervention can be described by an additional code:

a) input is acceptable in its current state;

b) input should be reduced/prevented;

c) input should be urgently reduced/avoided in a defined time period.