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 - 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

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

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 14654-4:2019) has been prepared by Technical Committee CEN/TC 165 “Wastewater Engineering”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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*; (the present document)

— *Part 2: Rehabilitation*

— *Part 3: Sewer cleaning*

— *Part 4: Control of inputs*

In drafting this part of this document 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.

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 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*

prEN 14654-1:2019, *Drain and sewer systems outside buildings — Management and control of operational activities — Part 1: General requirements*

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

3 Terms and definitions

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

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

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

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

Note 1 to entry: 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, definition 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).

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.

This European Standard applies the process described in EN 14654-1 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.

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 Aims of control of inputs from users

The aims of input control are 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 of the drain or sewer system;

c) function of any mechanical or electrical equipment;

d) function of the wastewater treatment plant;

e) the public, by causing nuisance;

f) the environment.

Criteria for determining the compatibility of inputs 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 to the sewer system are adversely impacting or could adversely impact the:

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

b) function of the drain or sewer system;

c) function of any mechanical or electrical equipment;

d) function of the wastewater treatment plant;

e) public, by causing nuisance;

f) environment.

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 prEN 14654-3:2019) 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 13508-1) 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.

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

— Type 1: problems of industrial, commercial or industrial 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) the input is acceptable in its current state;

b) the input should be improved;

c) the input should be improved urgently in a defined time period.

6.5 Develop the programme

6.5.1 Introduction

A control of inputs programme shall:

— identify optimum frequencies for pro-active control of inputs activities;

— identify optimum frequencies for review of data;

— maintain or reduce the number of reactive control of inputs activities to an acceptable level.

6.5.2 Specification of objectives

The objectives of control of inputs activities should be established in accordance with the aims described in 5.2. These should be expressed as a performance requirement, for example:

a) to reduce to a specified number, the numbers of blockages of drains and sewers or of mechanical equipment caused by a specific input; or

b) to reduce the frequency of cleaning activities required to achieve specified performance; or

c) to reduce the number of pollution incidents.

6.5.3 Developing options

6.5.3.1 Introduction

Methods of control can, depending on national or local regulations (see Clause 4) include:

a) Use of regulatory powers (where available);

b) information campaigns to change user behaviour;

c) other solutions.

The nature of the inputs can be only a contributory factor. Where frequent problems occur, or where the consequences are severe, consideration should be given to the feasibility of carrying out