



SLOVENSKI STANDARD SIST EN 14654-1:2014

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Upravljanje in nadzor operativnih aktivnosti odvodnih in odpadnih sistemov zunaj stavb - 1. del: Čiščenje

Management and control of operational activities in drain and sewer systems outside buildings - Part 1: Cleaning

Management und Überwachung von betrieblichen Maßnahmen in Entwässerungssystemen außerhalb von Gebäuden - Teil 1: Reinigung
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Gestion et contrôle des opérations d'exploitation dans les réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Partie 1: Nettoyage
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Management and control of operational activities in drain and sewer systems outside buildings - Part 1: Cleaning

Gestion et contrôle des opérations d'exploitation dans les réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Partie 1: Nettoyage

Management und Überwachung von betrieblichen Maßnahmen in Entwässerungssystemen außerhalb von Gebäuden - Teil 1: Reinigung

This European Standard was approved by CEN on 17 April 2014.

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

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EN 14654-1:2014 (E)**Foreword**

This document (EN 14654-1:2014) 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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

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 14654-1:2005.

EN 14654 "*Management and control of operational activities in drain and sewer systems outside buildings*" contains the following parts:

- *Part 1: Cleaning;*
- *Part 2: Rehabilitation.*

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 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard deals with the management and control of cleaning operations in drain and sewer systems. Cleaning operations are a part of the general management of drain and sewer systems.

The employing authority sets the aims of the cleaning operations, expressed in terms of the end result, necessary to achieve the performance requirements for the drain and sewer system (see EN 752), and develops a strategy to meet these aims. The employing authority also produces a specification for cleaning operations taking account of the aims and the strategy, and including indicators for controlling the quality of the results.

Before commencing cleaning operations, the employing authority should have a thorough knowledge of the drain and sewer system and an assessment of the hydraulic conditions and other relevant factors in order to understand the type and frequency of cleaning necessary (see EN 752). However, it is sometimes necessary to carry out some work in order to obtain this knowledge.

On completion, a report of the cleaning operations is produced, providing information on the works, on any difficulties encountered and any anomalies.

This information is used to improve the management of drain and sewer systems.

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EN 14654-1:2014 (E)**1 Scope**

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

This European Standard covers the management and control of cleaning.

It is applicable to drain and sewer systems, which operate essentially under gravity, from the point where wastewater leaves a building, roof drainage system, or paved area, to the point where it is discharged into a treatment works 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, 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 752:2008, *Drain and sewer systems outside buildings*

EN 1829-1:2010, *High pressure water jet machines - Safety requirements - Part 1: Machines*

EN 1829-2:2008, *High-pressure water jet machines - Safety requirements - Part 2: Hoses, hose lines and connectors*

EN 13508-1:2012, *Investigation and assessment of drain and sewer systems outside buildings - Part 1: General Requirements*

EN ISO 14001, *Environmental management systems - Requirements with guidance for use (ISO 14001:2004)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 General**3.1.1****cleaning activities**

removal or partial removal of settled deposits, attached deposits, roots and other obstacles from a drain or sewer system

3.1.2**degree of cleaning**

extent to which complete removal of deposits is achieved

3.1.3**employing authority**

organization that owns or is responsible for the management of a drain or sewer system

3.1.4**removal**

extraction of deposits after collecting at the working area or the intentional use of the flow in the drain or sewer to carry the re-entrained solids to a specified point of extraction

3.1.5**self-cleansing**

ability of the flow in a drain or sewer to carry away solid particles which would otherwise be deposited in the pipe

[SOURCE: EN 16323: 2014, 2.2.1.13]

3.1.6**supernatant liquor**

liquor in a tank lying above the deposited solids

[SOURCE: EN 16323:2014, 2.1.2.16]

3.2 Deposits**3.2.1****attached deposits**

material attached to the wall of elements of the drain or sewer system by physical or chemical bonding

3.2.2**settled deposits**

material deposited by gravity in the invert or benching of elements of the drain or sewer system

3.3 Cleaning methods**3.3.1****cleaning ball**

spherical device, having an indented surface, designed to be carried through a drain or sewer by the flow to facilitate removal of sediments

[SOURCE: EN 752:2008, 3.9]

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3.3.2**combined jetting**

simultaneous use of high-pressure water jetting equipment together with a suction action, to remove obstructions or sediments from drains or sewers

[SOURCE: EN 16323:2014, 2.2.1.10]

3.3.3**flushing**

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

[SOURCE: EN 16323: 2014, 2.2.1.16]

3.3.4**jetting**

use of water under defined conditions of pressure and flow through a nozzle

[SOURCE: EN 16323:2014, 2.2.1.18]

3.3.5**rodding**

use of appropriate device on the end of flexible rods to facilitate the removal of obstructions (or sediments) from drains or sewers

[SOURCE: EN 16323: 2014, 2.2.1.11]

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3.3.6

scouring plate

device used to clean a drain or sewer by concentrating the flow into a small cross section thereby increasing the flow velocity

3.3.7

winching

use of a device pulled through a drain or sewer to facilitate removal of sediments (or obstructions)

[SOURCE: EN 16323:2014, 2.2.1.12]

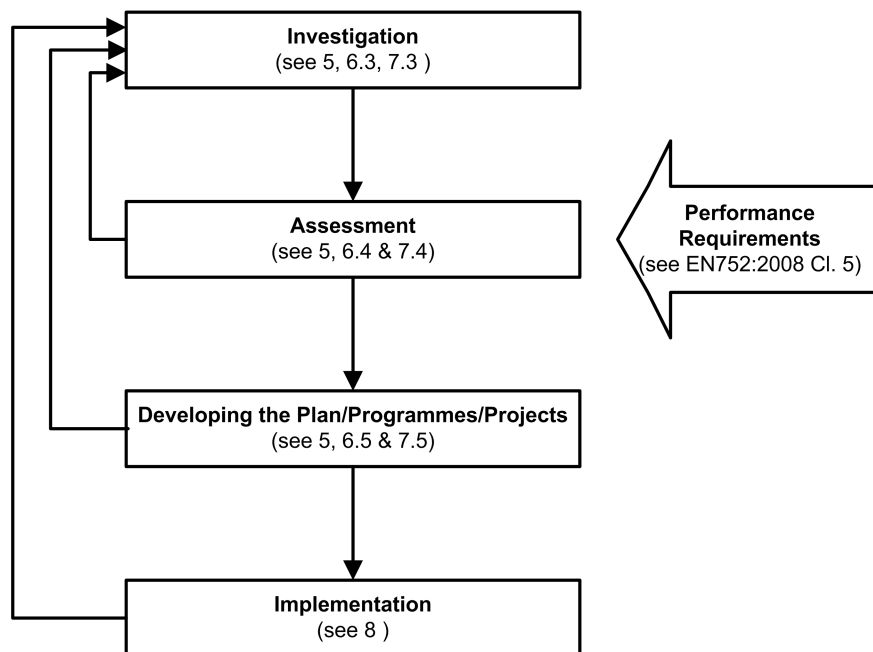
4 General

EN 752:2008, Clause 6, outlines the process for preparation and implementation of an integrated drain and sewer system management plan which includes, at a strategic level, plans for the rehabilitation and maintenance of the drain and sewer system. The amount of detail in these plans in the integrated drain and sewer system plan can vary. A maintenance plan should include a cleaning plan where cleaning activities are necessary.

Cleaning activities in drains and sewers can be carried out pro-actively, to prevent problems occurring or to clean a drain or sewer before particular operations (e.g. an inspection or renovation work) or reactively in response to problems that have occurred.

The requirements for pro-active cleaning can be identified through a rehabilitation plan, a maintenance plan involving periodic monitoring or as part of an integrated sewer system management plan in accordance with EN 752. Consideration shall also be given to the feasibility of preventing deposition of sediments for example by rehabilitation of the sewer.

This European Standard sets out a process for implementing the cleaning activities in the integrated drain and sewer system management plan. The process is based on a staged application of the process outlined in Figure 1.



NOTE Based on EN 752:2008, Figure 5.

Figure 1 — Integrated Sewer System Management Process

The integrated sewer system management process is applied successively to develop a cleaning programme based on the integrated sewer system management plan. The programme outlines a series of discrete projects to implement the plan. Following this, the integrated sewer system management process is then used to produce a detailed specification for each of these projects in the programme. Finally, following the implementation of each project, the cleaning programme and the integrated sewer system management plan are reviewed and updated where necessary. The performance requirements should be in accordance with EN 752:2008, 5.2.

At each stage further investigation and assessment is carried out in accordance with EN 13508-1.

This staged process is summarized in full in Figure 2. The extent and detail of these stages should be determined by the characteristics of the individual systems. According to the specific local conditions, stages may be consolidated or, if they are not necessary, omitted.

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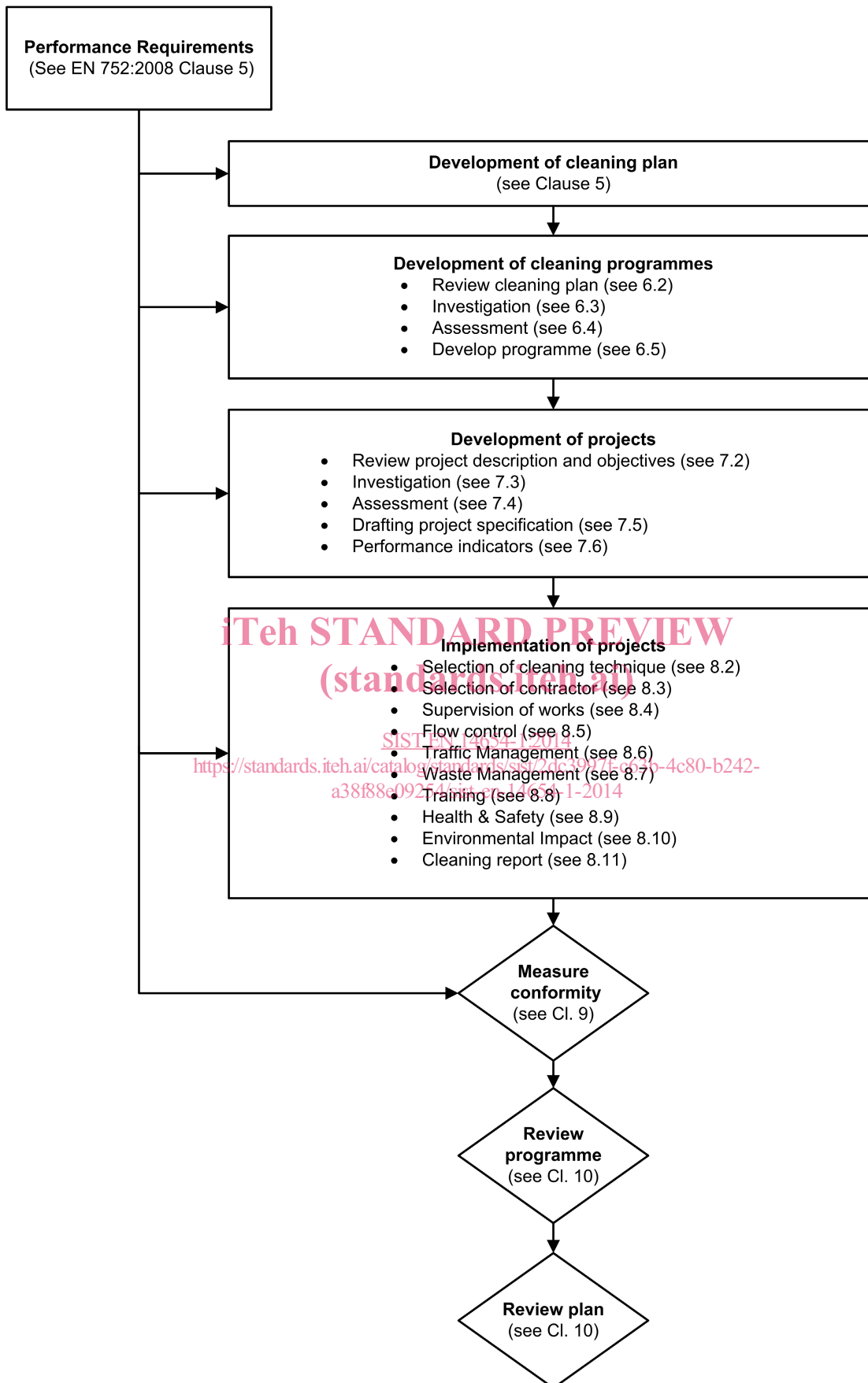


Figure 2 — Summary of the sewer cleaning management and control process