



SLOVENSKI STANDARD

SIST EN 13508-1:2004

01-maj-2004

Ugotavljanje stanja drenažnih in kanalizacijskih sistemov zunaj stavb - 1. del: Splošne zahteve

Condition of drain and sewer systems outside buildings - Part 1: General requirements

Zustandserfassung von Entwässerungssystemen außerhalb von Gebäuden - Teil 1:
Allgemeine Anforderungen

Etat des réseaux d'évacuation et d'assainissement à l'extérieur des bâtiments - Partie 1:
Exigences générales

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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2003

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English version

Condition of drain and sewer systems outside buildings - Part 1: General requirements

Condition des réseaux d'évacuation et d'assainissement à
l'extérieur des bâtiments - Partie 1: Exigences générales

Zustandserfassung von Entwässerungssystemen
außerhalb von Gebäuden - Teil 1: Allgemeine
Anforderungen

This European Standard was approved by CEN on 1 September 2003.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13508-1:2003) 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 May 2004, and conflicting national standards shall be withdrawn at the latest by May 2004.

The standard series EN 13508 "Condition of drain and sewer systems outside buildings" contains the following parts:

- Part 1: General Requirements
- Part 2: Visual inspection coding system

Other parts, dealing with other inspection methods may be added later.

In drafting this part of this European Standard account has been taken of other available standards, in particular EN 752 "Drain and sewer systems outside buildings".

Annex A of this European Standard is 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 13508-1:2003 (E)**1 Scope**

This European Standard is applicable to the establishment of the condition of drain and sewer systems by inspection, status codification and consideration of external factors and other information.

It is applicable to drain and sewer systems, which operate essentially under gravity, from the point where the sewage leaves a building or roof drainage system, or enters a road gully, to the point where it is discharged into a treatment works or receiving water. Drains and sewers below buildings are included provided that they do not form part of the drainage system of the building.

This part of the standard specifies general requirements for the establishment of the condition of drain and sewer systems outside buildings.

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 752-1:1995, *Drain and sewer systems outside buildings — Part 1: Generalities and definitions.*

EN 752-2:1996, *Drain and sewer systems outside buildings — Part 2: Performance requirements.*

EN 752-5:1997, *Drain and sewer systems outside buildings — Part 5: Rehabilitation.*

EN 752-7:1998, *Drain and sewer systems outside buildings — Part 7: Maintenance and operations.*

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3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 752-1:1995, and the following apply.

**3.1
element**

component or group of components of a drain or sewer system which form a structural entity, for example a length of sewer between two manholes, a manhole or an inspection chamber

**3.2
extraneous water**

unwanted flow in a drain or sewer system
[EN 752-1:1995]

**3.3
structural condition**

state of a drain or sewer in matters relating to the integrity of its fabric
[EN 752-5:1997]

**3.4
rehabilitation**

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

3.5

relevant authority

organisation with appropriate statutory powers of control
[EN 752-1:1995]

4 General

The establishment of the condition of a drain and sewer system and its elements is a necessary part of the process of assessing the performance of the system. The elements can include:

- drains and sewers;
- manholes and inspection chambers;
- gullies;
- combined sewer overflows and detention tanks;
- pumping stations;
- rising mains and vacuum mains.

An understanding of the condition of drain and sewer systems is required for a number of purposes including the following.

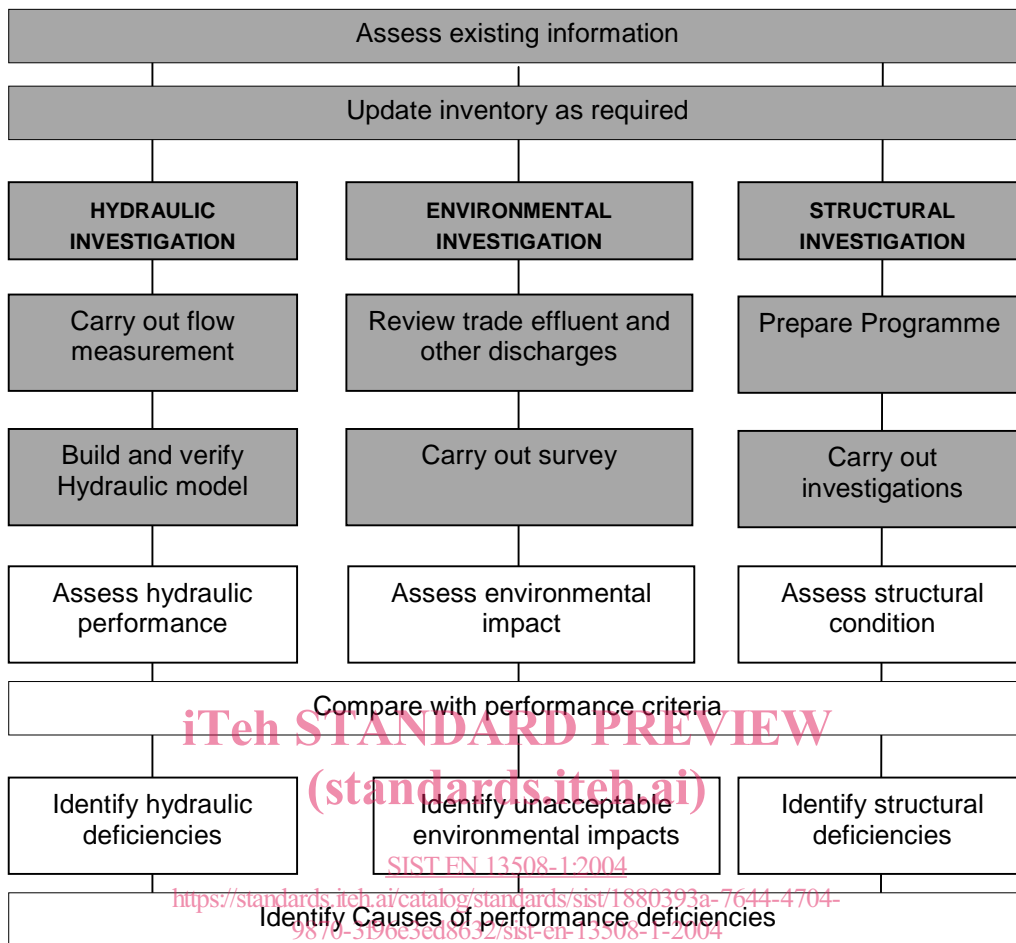
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a) Planning of operation and maintenance activities in accordance with EN 752-7

Clause 6 of EN 752-7:1998 gives guidance on operations and maintenance planning for drain and sewer systems. These include setting inspection routines, contingency planning and maintenance planning. These require an understanding of the risks associated with elements in the system.

b) Diagnostic study in accordance with EN 752-5

Clause 7 of EN 752-5:1997 gives recommendations for carrying out diagnostic studies of drain and sewer systems to identify performance deficiencies. Typical procedures are given in Figure 1. Those parts of the diagnostic study within the scope of this standard are shaded in Figure 1.



**Figure 1 — Flow chart for diagnostic study of drain and sewer systems
(Extract from Figure 1 in EN 752-5:1997)**

The establishment of condition requires information from a variety of sources. For the employing authority to determine the information requirements it is necessary to understand the possible:

- performance requirements (details are given in clause 5);
- performance deficiencies (details are given in clause 6);
- consequences of the performance deficiencies (details are given in clause 7).

Clause 8 gives details of the information necessary to establish condition including:

- information requirements;
- existing information;
- investigations;
- assessing the quality of information.

5 Performance Requirements

Establishment of the performance requirements for drain and sewer systems is necessary in order to determine the information required to establish the condition.

The basic performance requirements for drain and sewer systems are listed in Clause 6 of EN 752-2:1996 as follows:

- a) pipework operates without blocking;
- b) flooding frequencies shall be limited to prescribed values;
- c) public health and life shall be safeguarded;
- d) sewer surcharge frequencies should be limited to prescribed values;
- e) health and safety of operator personnel shall be safeguarded;
- f) receiving waters shall be protected from pollution within prescribed limits;
- g) drains and sewers shall not endanger existing adjacent structures and utility services;
- h) required design life and structural integrity shall be achieved;
- i) drains and sewers shall be watertight in accordance with testing requirements;
- j) odour nuisance and toxicity do not arise;
- k) appropriate access shall be provided for maintenance purposes.

These requirements apply to all or to some elements of the system. For example:

- some apply to all elements directly (e.g. 'the health and safety of the operator personnel shall be safeguarded');
- some apply to some elements directly (e.g. 'the required design life and structural integrity shall be achieved');
- some should be used to derive element specific requirements (e.g. 'the flooding frequencies should be limited to prescribed values' becomes a requirement for a flow capacity for each pipeline).

6 Performance Deficiencies

6.1 Gravity drains and sewers, gullies, manholes and inspection chambers

A knowledge of the possible performance deficiencies is necessary in order to determine the information required to establish the condition. All likely performance deficiencies shall be considered including the following.

- a) Collapse of the element, which could cause blockage or subsidence. The probability of collapse should be considered taking account of all relevant factors including the:
 - observed structural condition of the element;
 - type of soil;
 - whether there is ingress of soil;
 - presence of infiltration or evidence of exfiltration;