SLOVENSKI STANDARD
SIST EN ISO 5667-13:1998

01-maj-1998

Kakovost vode - Vzorčenje - 13. del: Navodilo za vzorčenje blata iz odpadnih in čiščenih odpadnih vod (ISO 5667-13:1997)

Water quality - Sampling - Part 13: Guidance on sampling of sludges from sewage and water treatment works (ISO 5667-13:1997)

Wasserbeschaffenheit - Probenahme - Teil 13: Anleitung zur Probenahme von Schlämmen aus Abwasserbehandlungs- und Wasseraufbereitungsanlagen (ISO 5667-13:1997)

Qualité de l'eau - Echantillonnage - Partie 13: Guide pour l'échantillonnage de boues provenant d'installations de traitement de l'eau et des eaux usées (ISO 5667-13:1997)

Ta slovenski standard je istoveten z: **EN ISO 5667-13:1997**

ICS:

13.060.30	Odpadna voda	Sewage water
13.060.45	Preiskava vode na splošno	Examination of water in general

SIST EN ISO 5667-13:1998 **en**

EUROPEAN STANDARD
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EN ISO 5667-13

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Descriptors: see ISO document

English version

Water quality - Sampling - Part 13: Guidance on sampling of sludges from sewage and water treatment works (ISO 5667-13:1997)

Qualité de l'eau - Echantillonnage - Partie 13: Guide pour l'échantillonnage de boues provenant d'installations de traitement de l'eau et des eaux usées (ISO 5667-13:1997)

This European Standard was approved by CEN on 20 December 1997.

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 Central Secretariat 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 Central Secretariat 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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN ISO 5667-13:1997 E

Foreword

The text of the International Standard ISO 5667-13:1997 has been prepared by Technical Committee ISO/TC 147 "Water quality" in collaboration with Technical Committee CEN/TC 308 "Characterization of sludges", the secretariat of which is held by AFNOR.

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 June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 5667-13 was approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 5667-13

First edition
1997-12-15

Water quality — Sampling —

Part 13: Guidance on sampling of sludges from sewage and water treatment works

Qualité de l'eau — Échantillonnage —

Partie 13: Guide pour l'échantillonnage de boues provenant d'installations de traitement de l'eau et des eaux usées

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Contents

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5667-13 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 6, *Sampling (general method).*

International Standard ISO 5667 consists of the following parts, under the general title *Water quality — Sampling*

— *Part 1: Guidance on the design of sampling programmes*

— *Part 2: Guidance on sampling techniques*

— *Part 3: Guidance on the preservation and handling of samples*

— *Part 4: Guidance on sampling from lakes, natural and man-made*

— *Part 5: Guidance on sampling of drinking water and water used for food and beverage processing*

— *Part 6: Guidance on sampling of rivers and streams*

— *Part 7: Guidance on sampling of water and steam in boiler plants*

— *Part 8: Guidance on the sampling of wet deposition*

— *Part 9: Guidance on sampling from marine waters*

— *Part 10: Guidance on sampling of waste waters*

— *Part 11: Guidance on sampling of groundwaters*

— *Part 12: Guidance on sampling of bottom sediments*

— *Part 13: Guidance on sampling of sludges from sewage and water treatment works*

— *Part 14: Guidance on quality assurance of environmental water sampling and handling*

— *Part 16: Guidance on biotesting of samples*

Annexes A, B and C of this part of ISO 5667 are for information only.

Introduction

This part of ISO 5667 should be read in conjunction with ISO 5667-1, ISO 5567-2 and ISO 5667-3. The general terminology used is in accordance with the various parts of ISO 6107.

Sampling and the determination of the physical and chemical properties of sludges and related solids are normally carried out for a specific purpose. The sampling methods given are suitable for general use but do not exclude modification in the light of any special factor known to the analyst receiving the samples or any operational reason dictating the need for sampling.

The importance of using a valid sampling technique cannot be overemphasized if the subsequent analysis is to be worthwhile. It is important that the personnel taking and analysing the sample be fully aware of its nature and the purpose for which the analysis is required before embarking on any work programme. Full cooperation with the laboratory that will be analysing the samples ensures that the most effective application of the sampling occasion can be made. For example, the use of method-specific sample preservation techniques will assist in the accurate determination of results.

Water quality — Sampling —

Part 13:

Guidance on sampling of sludges from sewage and water treatment works

1 Scope

This part of ISO 5667 gives guidance on the sampling of sludges from wastewater treatment works, water treatment works and industrial processes. It is applicable to all types of sludge arising from these works and also to sludges of similar characteristics, for example septic tank sludges. Guidance is also given on the design of sampling programmes and techniques for the collection of samples.

This part of ISO 5667 is applicable to sampling motivated by different objectives, some of which are to:

— provide data for the operation of activated sludge plants;

— provide data for the operation of sludge treatment facilities;

— determine the concentration of pollutants in wastewater sludges for disposal to landfill;

— test whether prescribed substance limits are contravened when sludge is used in agriculture;

— provide information on process control in potable and wastewater treatment, including:

  a) addition or withdrawal of solids;

  b) addition or withdrawal of liquid;

— provide information for legally enforceable aspects of the disposal of sewage and waterworks' sludges;

— facilitate special investigations into the performance of new equipment and processes;

— optimize costs; for example for the transport of sludges for treatment and/or disposal.

NOTE When designing a sludge sampling programme, it is essential that the objectives of the study be kept in mind, so that the information gained corresponds to that required. In addition, the data should not be distorted by the use of inappropriate techniques, such as inadequate storage temperatures or the sampling of unrepresentative parts of a treatment plant.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5667. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5667 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques.*

ISO 5667-3:1994, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples.*

ISO 5667-12:1995, *Water quality — Sampling — Part 12: Guidance on sampling of bottom sediments.*

ISO 5667-14: —[1], *Water quality — Sampling — Part 14: Guidance on quality assurance of environmental water sampling and handling.*

ISO 8363: —[2], *Measurement of liquid flow in open channels — General guidelines for selection of method.*

ISO 10381-6:1993, *Soil quality — Sampling — Part 6: Guidance on the collection, handling and storage of soil for the assessment of aerobic microbial processes in the laboratory.*

3 Definitions

For the purposes of this part of ISO 5667, the following definitions apply:

3.1 grab sample
discrete sample taken randomly (with regard to time and/or location) from a body of sludge

[Based on ISO 6107-2]

3.2 composite sample
two or more samples or subsamples, mixed together in appropriate known proportions (either discretely or continuously), from which the average value of a desired characteristic may be obtained

NOTE The proportions are usually based on time or flow measurements.

[Based on ISO 6107-2]

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[1] To be published.

[2] To be published. (Revision of ISO 8363:1986)

3.3 flow-related sampling
samples taken at varying time intervals governed by material flow

NOTE This usually applies to liquid sludges; further guidance can be drawn from ISO 5667-10.

3.4 proportional sampling
technique for obtaining a sample from flowing sludge in which the frequency of collection (in the case of discrete sampling), or the sample flowrate (in the case of continuous sampling), is directly proportional to the flow rate of the sampled sludge

4 Sampling equipment

4.1 Materials

The sampling of sludge from fixed points can require the installation of permanent equipment, even if this is only an additional pipe and valve to the processing plant. It is important to verify that any such equipment is regularly cleaned and that it is free from corrosion. In addition, it will be necessary to assess the potential for interference on any test results that the equipment may have. For example, the use of aluminium extension pipes to a sampling valve would be inappropriate if the samples were being taken for the analysis of an aluminium flocculation assister. In general, the laboratory performing the sludge examination should be consulted before installation of any fixed point equipment or at the implementation of a new sampling scheme.

Tools should be chosen to avoid contamination by substances of interest. They should be kept clean and corrosion free. Plastics utensils and polytetrafluoroethylene pallet knives may be used if they prove to be robust and the absence of any contaminating influence can be demonstrated. High alloy steels should be avoided if trace metals are to be determined. The use of stainless steel tools is routinely adopted but the possibility of contamination needs to be recognized and tested for if analyses for elements such as chromium are to be performed on the sludge sample. Old, rusty tools or those with chipped or flaking surface coatings and painted surfaces should not be used, as they may contribute to random contamination of samples.

Polyethylene, polypropylene, polycarbonate and glass containers are satisfactory from the point of view of chemical stability when sludge sampling (see also 6.1). However, caution should be exercised since containers can become pressurized due to gas production in wastewater sludges and explosive situations may occur. Guidance on overcoming this problem is given in clause 7.

Glass containers should be used when organic constituents, such as pesticides, are to be determined whereas polyethylene containers are preferable for sampling parameters of general interest such as pH and dry matter. Polyethylene containers may not be suitable for collecting samples to be subjected to some trace metal analysis (for example mercury); these containers should only be used if preliminary tests indicate acceptable levels of interference.