SLOVENSKI STANDARD
SIST EN 14899:2006

01-maj-2006

Karakterizacija odpadkov – Vzorčenje odpadkov – Okvirno navodilo za pripravo in uporabo načrta vzorčenja

Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan

Charakterisierung von Abfällen - Probenahme von Abfällen - Rahmen für die Erstellung und Anwendung eines Probenahmeplans

Caractérisation des déchets - Prélèvement des déchets - Procédure-cadre pour l'élaboration et la mise en oeuvre d'un plan d'échantillonnage

Ta slovenski standard je istoveten z: **EN 14899:2005**

ICS:

13.030.01	Odpadki na splošno	Wastes in general

SIST EN 14899:2006 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14899

December 2005

ICS 13.030.01

English Version

Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan

Caractérisation des déchets - Prélèvement des déchets - Procédure-cadre pour l'élaboration et la mise en oeuvre d'un plan d'échantillonnage

Charakterisierung von Abfällen - Probenahme von Abfällen - Rahmen für die Erstellung und Anwendung eines Probenahmeplans

This European Standard was approved by CEN on 28 October 2005.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword

This European Standard (EN 14899:2005) has been prepared by Technical Committee CEN/TC 292 “Characterization of waste”, the secretariat of which is held by NEN.

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 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

This European Standard has been prepared under the mandate M/326 given to CEN by the European Commission and the European Free Trade Association.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

Wastes are materials, which the holder discards, or intends or is required to discard, and which may be sent for final disposal, reuse or recovery. Such materials are generally heterogeneous and it will be necessary therefore to specify in the testing programme the amount of material for which the characteristics of interest need to be defined. The testing of wastes allows informed decisions to be made on the appropriate way in which they should be treated, (or not), and recovered or disposed. In order to undertake valid tests a (number of) representative sample(s) of the waste may be required.

The potential scope of an overall testing programme can be complex, the process flow chart in Figure 1, defines 7 key steps that make up the essential elements of the testing programme. The principles outlined in this European Standard provide a framework that can be used to design and develop a Sampling Plan; being the first of the 7 key steps. This European Standard should be read in conjunction with the other standards developed by TC 292, which provide detailed instructions on how to complete the remaining key steps. All information is provided in accordance with the requirements specified in these European Standards. Further information on the relationship between the production of a Sampling Plan and the overall testing programme objectives can be found in prCEN/TR 15310-5.

At the outset, all appropriate involved parties will discuss and agree the objectives and boundaries of the programme, although in some cases pre-conditions set by national legislation may define these objectives. In turn the objectives will help define the level of testing required e.g. basic characterization, compliance or verification testing, in addition to the desired reliability of the testing / assessment and frequency of testing. In designing the sampling exercise attention will then be given to other factors, which include: the type of material to be sampled, the accessibility of the material and the parameters to be determined. Collectively, these activities allow the scope of the testing programme to emerge.

To reach the objectives of a testing programme, methods of sampling need to be selected or designed that ensure availability of appropriate samples representative for the purpose of the tests to be performed. The overall test programme design often involves iterative discussion between the involved parties.

A Sampling Plan is defined by the specific objectives of the testing programme and how those objectives can be practically achieved with reference specifically to the sampling activities for the situation and material under investigation. Additionally, this European Standard deals with the actual sampling in accordance with the Sampling Plan and the development of the sampling report. More than one Sampling Plan may be required to fulfil all the objectives of the testing programme. A Sampling Plan should detail all the information pertinent to a particular sampling exercise.

The procedural steps that will be considered to complete key step 1 “The preparation and application of a Sampling Plan” are detailed in Figure 2. It is this process map that provides the basic framework for the practitioner developing a Sampling Plan to meet the requirements of any testing programme. This European Standard can be used to:

— produce standardised sampling plans for use in regular or routine circumstances (elaboration of daughter/derived standards dedicated to well defined sampling scenarios);

— incorporate the specific sampling requirements of European and national legislation;

— design and develop a Sampling Plan for use on a case by case basis.

Essential information for the application of this European Standard can be found in the following five Technical Reports:

CEN/TR 15310-1[1]: Characterization of waste — Sampling of waste materials — Part 1: Guidance on selection and application of criteria for sampling under various conditions;

CEN/TR 15310-2[1]: Characterization of waste — Sampling of waste materials — Part 2: Guidance on sampling techniques;

CEN/TR 15310-3[1]: Characterization of waste — Sampling of waste materials — Part 3: Guidance on procedures for sub-sampling in the field;

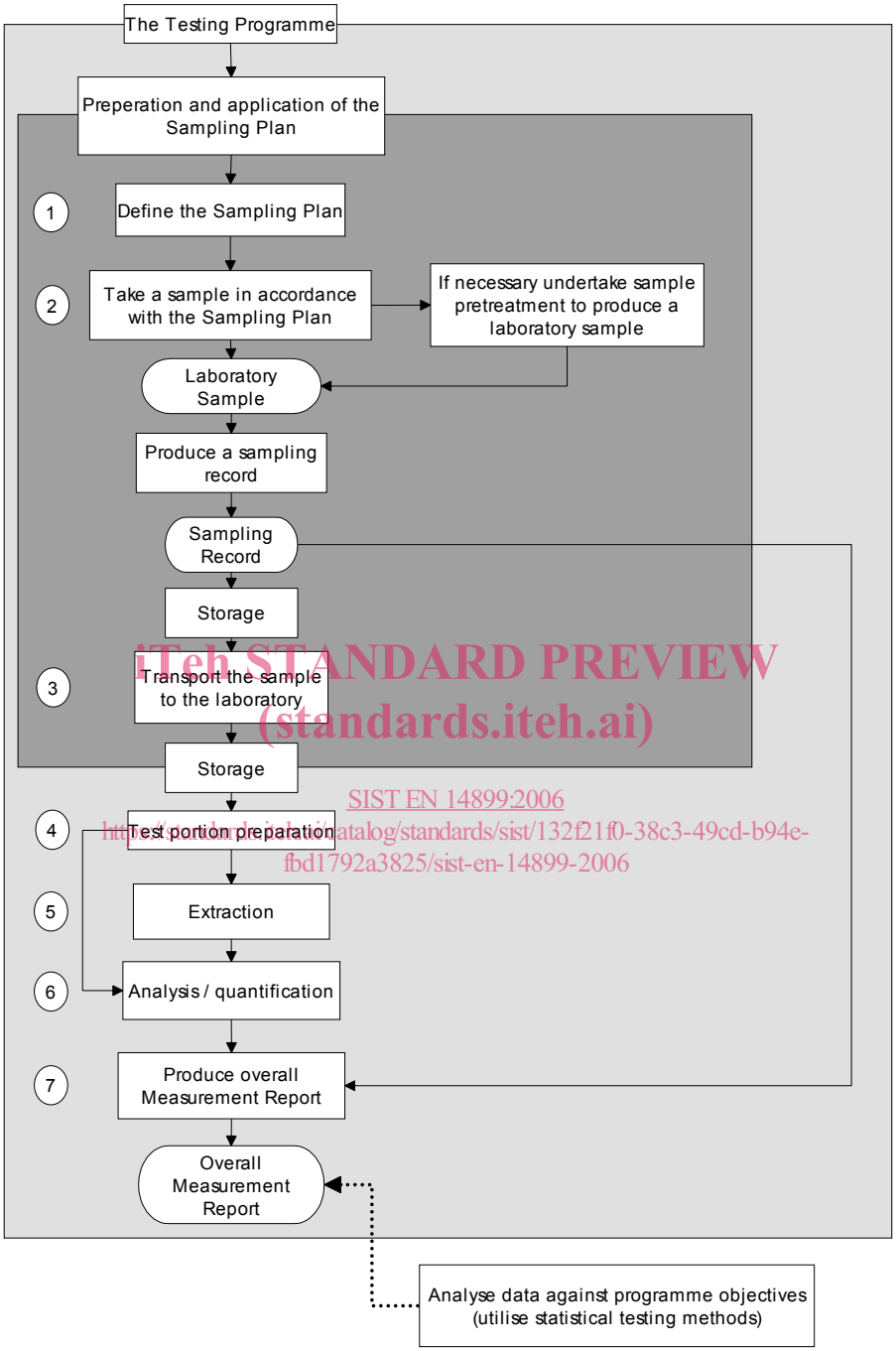
CEN/TR 15310-4[1]: Characterization of waste — Sampling of waste materials — Part 4: Guidance on procedures for sample packaging, storage, preservation, transport and delivery;

CEN/TR 15310-5[1]: Characterization of waste — Sampling of waste materials — Part 5: Guidance on the process of defining the sampling plan.

The Technical Reports contain procedural options (as detailed in Figure 2) that can be selected to match the sampling requirements of any testing programme.

Although this European Standard refers in most cases to the taking of one sample or increment, or the preparation of one laboratory sample, it should be noted that in many cases this will be more than one. For simplicity this European Standard adopts the use of singular terms, plural terms will however be possible or likely.

[1] To be published.



NOTE Key steps define the 7 overall steps that make-up a testing programme.

Figure 1 — Links between the essential elements of a testing programme

1 Scope

This European Standard specifies the procedural steps to be taken in the preparation and application of a Sampling Plan. The Sampling Plan describes the method of collection of the laboratory sample necessary for meeting the objective of the testing programme. The principles or basic rules outlined in this European Standard, provide a framework that can be used by the project manager to:

— produce standardised Sampling Plans for use in regular or routine circumstances (elaboration of daughter/derived standards dedicated to well defined sampling scenarios);

— incorporate the specific sampling requirements of European and national legislation;

— design and develop a Sampling Plan for use on a case by case basis.

This European Standard has been developed for the characterization of waste.

There may be a need for more than one Sampling Plan to meet all the requirements of the testing programme. Ultimately the Sampling Plan provides the sampler with detailed instructions on how sampling should be carried out.

NOTE Although this European Standard in most cases refers to the taking of one sample or increment or the preparation of one laboratory sample, it should be noted that often this should be more than one. For simplicity reasons this European Standard uses singular terms, while plural terms are also possible or even likely.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13965-1:2004, *Characterization of waste — Terminology — Part1: Material related terms and definitions*

EN 13965-2:2004, *Characterization of waste — Terminology — Part2: Management related terms and definitions*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13965-1:2004, EN 13965-2:2004 and the following apply.

NOTE This European Standard avoids the use of the terms ‘sampling protocol’ and ‘sampling strategy’ as they are both known to represent conflicting concepts in a number of countries.

3.1
composite sample
two or more increments / sub-samples mixed together in appropriate proportions, either discretely or continuously (blended composite sample), from which the average value of a desired characteristic may be obtained
[ISO 11074-2:1998]

3.2
constituent
property or attribute of a material that is measured, compared or noted

3.3
field sample
quantity (mass or volume) of material obtained through sampling without any sub-sampling

3.4
heterogeneity
degree to which a constituent (3.2) is not uniformly distributed throughout a quantity of material

NOTE 1 A material may be homogeneous with respect to one constituent or property but heterogeneous with respect to another.

NOTE 2 The degree of heterogeneity is the determining factor in sampling uncertainty.

3.5
homogeneity
degree to which a constituent (3.2) is uniformly distributed throughout a quantity of material

3.6
increment
individual portion of material collected by a single operation of a sampling device which will not be analysed / investigated as a single entity, but will be mixed with other increments in a composite sample

NOTE 1 Whenever the portion of material collected by a single operation of a sampling device is analysed individually, the obtained material is called a sample. In such a situation the quantity of material has to fulfil both the criteria for the size of an increment as well as for a sample.

NOTE 2 In some languages the term 'increment' is used without the condition that an increment will never be analysed on its own. For this European Standard this is however an essential condition in the definition of the term 'increment'.

3.7
involved parties
individuals involved in the (iterative) process relating to the exchange of information regarding the material to be sampled

NOTE Such parties include, for instance, the sampler, the analyst, the client, the regulator and the producer of the material. The person responsible for the overall measurement report is the Project Manager.

3.8
judgemental sampling
samples collected using at best a partially-probabilistic procedure and at worst a non-probabilistic approach

NOTE Usually these samples are taken from a sub-population which is substantially more restrictive than the overall population.

3.9
laboratory sample
sample(s) or sub-sample(s) sent to or received by the laboratory

NOTE 1 The laboratory sample may be used directly as the test sample, or may require further preparation such as sample size reduction, mixing, grinding, or any combinations of these operations to produce the test sample.

NOTE 2 The laboratory sample is the final sample from the point of view of sample collection but it is the initial sample from the point of view of the laboratory.

NOTE 3 Several laboratory samples may be prepared and sent to different laboratories or to the same laboratory for different purposes.

3.10
probabilistic sampling
sampling conducted according to the statistical principles of sampling

NOTE 1 The essential principle of probabilistic sampling is that every individual particle or item in the population has an equal chance of being sampled.

NOTE 2 Probabilistic sampling results in boundary conditions for the type of sampling equipment used, the method of sampling (where, when, how) and the minimum size of increments and (composite) samples.

3.11
project manager
individual responsible for the development of the Sampling Plan and the testing programme

3.12
population
totality of items under consideration
[ISO 3534-1:1993]

3.13
representative sample
sample in which the characteristic(s) of interest is (are) present with a reliability appropriate for the purposes of the testing programme

3.14
sample
portion of material selected from a larger quantity of material
[ISO 11074-2:1998]

NOTE 1 The manner of selection of the sample should be described in a sampling plan.

NOTE 2 The use of the term 'sample' should be supported with a preface as far as possible as it does not indicate to which step of the total sampling procedure it is related when used alone e.g. field sample, laboratory sample.

3.15
sampler
person carrying out the sampling procedures at the sampling locality
[ISO 11074-2:1998]

NOTE 1 Tools and other devices to obtain samples are sometimes also designated 'samplers'. In this case write 'sampling devices' or 'sampling equipment'.

NOTE 2 The sampler should have specific knowledge and experience in waste sampling. The Sampling Plan may state that the sampler shall be independent of the producer of the waste.

3.16
sample size
number of items or the quantity of material constituting a sample
[ISO 11074-2:1998]

3.17
sampling
process of drawing or constituting a sample
[ISO 3534-1:1993]