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English Version

**Characterization of waste - Sampling of waste materials - Part 2:  
Guidance on sampling techniques**

Caractérisation des déchets - Prélèvement des déchets -  
Partie 2 : Guide relatif aux techniques d'échantillonnage

Charakterisierung von Abfall - Probenahme - Teil 2:  
Anwendung von Probenahmetechniken

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## Foreword

This Technical Report (CEN/TR 15310-2:2006) has been prepared by Technical Committee CEN/TC 292 "Characterization of waste", the secretariat of which is held by NEN.

This Technical Report has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This Technical Report is one of a series of five, dealing with sampling techniques and procedures, which provide essential information for the application of the EN-standard:

EN 14899, Characterisation of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan.

The principal component of the EN Standard is the mandatory requirement to prepare a Sampling Plan. This EN 14899 standard can be used to:

- produce standardised sampling plans for use in regular or routine circumstances (i.e. the elaboration of daughter/derived standards dedicated to well defined sampling scenarios);
- incorporate specific sampling requirements into national legislation;
- design and develop a Sampling Plan on a case by case basis.

The Technical Reports display a range of potential approaches and tools to enable the project manager to tailor his sampling plan to a specific testing scenario (i.e. a 'shop shelf' approach to sampling plan development for waste testing). This approach allows flexibility in the selection of the sampling approach, sampling point, method of sampling and equipment used.

This Technical Report describes a range of techniques that could be used to sample a range of waste types from a variety of locations and arisings. Information is also provided on the selection and preparation of equipment and apparatus needed to complete the sampling exercise.

This report does not attempt to provide a definitive procedure for each and every situation that may arise from sampling a given waste type or specific analytical requirement, rather it aims to expose the factors that influence the selection of these practical field activities to ensure the most appropriate procedure is selected for any given sampling scenario. The most appropriate approach, tools, and methodology, in the absence of an existing recognised Sampling Plan should be chosen on a scenario-specific basis. However, this does not present a barrier to technical innovation, and there is no reason why methodologies other than those detailed in this Technical Report cannot be substituted.

## 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 how they should be treated (or not), recovered or disposed. In order to undertake valid tests, some sampling of the waste is required.

The principal component of the standard EN 14899 is the mandatory requirement to prepare a Sampling Plan, within the framework of an overall testing programme as illustrated in Figure 1 of EN 14899:2005. This standard can be used to:

- produce standardised sampling plans for use in regular or routine circumstances (i.e. the elaboration of daughter/derived standards dedicated to well defined sampling scenarios);
- incorporate specific sampling requirements into national legislation;
- design and develop a Sampling Plan on a case by case basis.

The development of a Sampling Plan within this framework involves the progression through three steps or activities.

- 1) Define the Sampling Plan
- 2) Take a field sample in accordance with the Sampling Plan
- 3) Transport the laboratory sample to the laboratory

This Technical Report provides information to support Key Step 2 of the Sampling Plan process map and describes a selection of sampling techniques that can be used in the recovery of a sample for a wide variety of waste types and arisings. The sampling technique is the physical procedure employed by the sampler to collect part or parts of a discarded or secondary material for subsequent investigations. Specifically this Technical Report provides information to support 4.2.8.1 (Identify the sampling technique) of the Framework Standard.

This Technical Report should be read in conjunction with the Framework Standard for the preparation and application of a Sampling Plan as well as the other Technical Reports that contain essential information to support the Framework Standard. The full series comprises:

- EN 14899, Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a Sampling Plan;
- CEN/TR 15310-1, 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, Characterization of waste – Sampling of waste materials – Part 2: Guidance on sampling techniques;
- CEN/TR 15310-3, Characterization of waste – Sampling of waste materials – Part 3: Guidance on procedures for sub-sampling in the field;
- CEN/TR 15310-4, Characterization of waste – Sampling of waste materials – Part 4: Guidance on procedures for sample packaging, storage, preservation, transport and delivery;
- CEN/TR 15310-5, 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 of EN 14899:2005) that can be selected to match the sampling requirements of any testing programme.

## 1 Scope

This Technical Report describes techniques for sampling liquid and granular waste material, including paste-like materials and sludges, found in a variety of locations. The Technical Report provides information to allow the selection and preparation of equipment and apparatus to be used in the sampling activity.

NOTE 1 This Technical Report provides a shop shelf of example sampling techniques that can be selected to meet a wide range of sampling situations. For a specific situation one of the presented procedures may be appropriate.

NOTE 2 The procedures listed in this Technical Report reflect current best practice, but these are not exhaustive and other procedures may be equally relevant.

## 2 Normative references

The following referenced documents are indispensable for the application 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 13965-1:2004, *Characterization of waste - Terminology - Part 1: Material related terms and definitions*

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

## 3 Terms and definitions

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

### 3.1

#### **bottom sediment**

solid layer of material on the bottom of liquid storage tanks

### 3.2

#### **characteristic**

property, which helps to identify or differentiate between items of a given population  
[ISO 3534-1]

NOTE The characteristic may be either quantitative (by variables) or qualitative (by attributes).

### 3.3

#### **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]

### 3.4

#### **column sample**

type of sample, more specifically related to the sampling of liquids where column samplers are used

NOTE A column of material is of equal length to the depth of the sub-population at that sampling point.