

ICS 75.160.10

English Version

Solid recovered fuels - Methods for the preparation of the test sample from the laboratory sample

Combustibles solides de récupération - Méthodes pour la préparation d'échantillons pour essais à partir d'échantillons de laboratoire

Feste Sekundärbrennstoffe - Verfahren zur zur Herstellung einer Prüfprobe aus einer Laborprobe

This Technical Specification (CEN/TS) was approved by CEN on 25 March 2006 for provisional application.

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Foreword

This document (CEN/TS 15413:2006) has been prepared by Technical Committee CEN/TC 343 “Solid Recovered Fuels”, the secretariat of which is held by SFS.

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

Introduction

In laboratory praxis different analytical procedures need to be applied very often to the laboratory sample that has been taken according to the sampling plan. For this purpose sub-sampling is applied in a way, that the different test portions are representative for the original laboratory sample with respect to the compounds of interest and the specific analytical procedures. The representativity of the laboratory sample and of the test portions is of major importance to guarantee the quality and accuracy of analytical results. The representativity of the laboratory sample is specified by the sampling plan.

This Technical Specification is largely based on the work already done by CEN/TC 292 "Characterization of waste", and in particular on latest drafts of just published EN 15002; actually, some experts who developed EN 15002 actively participated to the preparation of this Technical Specification as well.

EN 15002 was developed for the majority of waste samples, and most of its concepts and specifications are actually applicable to SRF samples as well, but there would be a number of major problems:

- several points of Annex A (normative) of EN 15002:2006 ("Guideline for choosing sample treatment techniques") are simply not applicable for SRF samples, due to the very particular nature of these samples, and in some cases this could be actually misleading.
- the main peculiarity that makes SRF samples significantly different from other kind of waste is that very often SRFs are solid, but neither "granular" nor monolithic; it often happens that SRF samples are fibrous-like materials, so the statistical formula for sampling (Annex B normative of EN 15002:2006, that links the minimum amount of sample depending on the particle size and other parameters), that is one of the foundations of EN 15002, is not applicable "as it is": one more term in the statistical equation is needed, namely the "shape factor" (s).
- all examples contained in Annex E of EN 15002:2006 are just not applicable for SRF samples, which may lead users who need to analyze SRF samples to misunderstandings.

Because of these reasons, a significant revision of just-published EN 15002 would have been necessary in order to fulfil all requirements for SRF samples, which presumably had better to be carried out jointly by CEN/TC 292 and TC 343. Moreover, even other CEN/TC 292 standards and TSs on sampling of waste would have become inconsistent and would have had to be revised in order to include the "shape factor" in the statistical formula. However, all of this work would probably have caused unacceptable delays for both CEN TCs. So, CEN TC 343 decided to proceed with the development of a new Technical Specification.

1 Scope

This Technical Specification specifies the correct sequence of operations to ensure the representativity of the test portions that has been taken according to the sampling plan, prior to physical and/or chemical analysis (e.g. extractions, digestion and/or analytical determinations) of solid samples.

This Technical Specification specifies the correct sequence of operations and treatments to be applied to the laboratory sample in order to obtain suitable test portions in compliance with the specific requirements defined in the corresponding analytical procedures.

2 Normative references

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

CEN/TS 15357:2006, *Solid recovered fuels — Terminology, definitions and descriptions*

prCEN/TS 15443, *Solid recovered fuels — Methods for laboratory sample preparation*

3 Terms and definitions

For the purposes of this Technical Specification, the terms and definitions given in CEN/TS 15357:2006 and the following apply.

3.1

drying

process of removing water from a sample

NOTE For the purpose of test portion preparation, it may be useful to remove just the amount of water that could interfere with other processes involved (e.g. during crushing or milling). In order to minimise the alteration of the sample during test portion preparation, removing the total amount of water present in the sample is not necessarily needed.

3.2

fraction separation

process of dividing components, particles or layers if homogenisation of the sample is practically not applicable and/or the analyses of different fractions or phases are appropriate

3.3

homogenisation

process of combining of components, particles or layers into a more homogeneous state of the original samples (in the case of composite samples) or pre-treated fractions of samples in order to ensure equal distribution of substances in and properties of the sample

3.4

sub-sampling

process of selecting one or more sub-samples from a sample

3.5

test portion; analytical portion

quantity of material of proper size, for measurement of the concentration or other properties of interest, removed from the test sample

NOTE The test portion may be taken from the laboratory sample directly if no preparation of sample is required (e.g. with liquids or samples of proper homogeneity, size and fineness), but usually it is taken from the prepared test sample.