



BSI Standards Publication

Solid recovered fuels — Methods for sampling

National foreword

This British Standard is the UK implementation of EN ISO 21645:2021. It is identical to ISO 21645:2021. It supersedes BS EN 15442:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PTI/17, Solid biofuels.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Probenahme (ISO 21645:2021)

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European foreword

This document (EN ISO 21645:2021) has been prepared by Technical Committee ISO/TC 300 "Solid recovered materials, including solid recovered fuels" in collaboration with Technical Committee CEN/TC 343 "Solid Recovered Fuels" the secretariat of which is held by SFS.

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of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15442:2011.

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Endorsement notice

The text of ISO 21645:2021 has been approved by CEN as EN ISO 21645:2021 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 300, *Solid recovered fuels*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The testing of solid recovered fuels (SRF) enables informed decisions about their subsequent handling and use. In order to carry out a test on a solid recovered fuel, a sample of the material is required. Before any sampling operation is devised, it is important that the objectives for sampling are clearly identified and subsequently well executed to ensure that the expectations of any involved parties are recognized and satisfied. The identification of objectives helps to define the level of testing required, e.g. thorough examination or routine testing, and in addition desired reliability of testing / assessment and frequency of testing. The sampling objectives, along with the sequence of operations required to fulfil them, are detailed in an overall sampling plan. After a sampling plan has been prepared, the sampling of SRF itself can be implemented.

This document is largely based on the work already done by CEN/TC 292 “*Characterization of waste*” (now integrated in CEN/TC 444 “*Environmental characterization of solid matrices*”), in particular EN 14899:2005^[1] and CEN/TR 15310-1:2006^[2].

The main characteristic that makes SRF samples significantly different from other kinds of waste is that SRFs are very often solid, but neither “granular” nor monolithic; it often happens that SRF samples are fibrous-like materials. This typical characteristic of SRF implies that the statistical formula for sampling of EN 14899:2005 and CEN/TR 15310-1:2006, Annex D are not applicable without amendment. The “shape factor” (f) is additionally needed in the statistical formula.

[Figure 1](#) shows the links between the essential elements of a testing program.

Sampling procedures are provided for a range of process streams and common storage conditions. The sampling technique adopted depends on a combination of different characteristics of the material and circumstances encountered at the sampling location. The determining factors are:

- the type of solid recovered fuel;
- the situation at the sampling location / the way in which the material occurs (e.g. in a stockpile, on a conveyor belt, in a lorry);
- the (expected) degree of heterogeneity (e.g. monostreams, mixed fuels, blended fuels).

This document is primarily geared toward laboratories, producers, suppliers and purchasers of solid recovered fuels, but is also useful for the authorities and inspection organizations.

Sampling of solid biofuels is described in ISO 18135^[3].

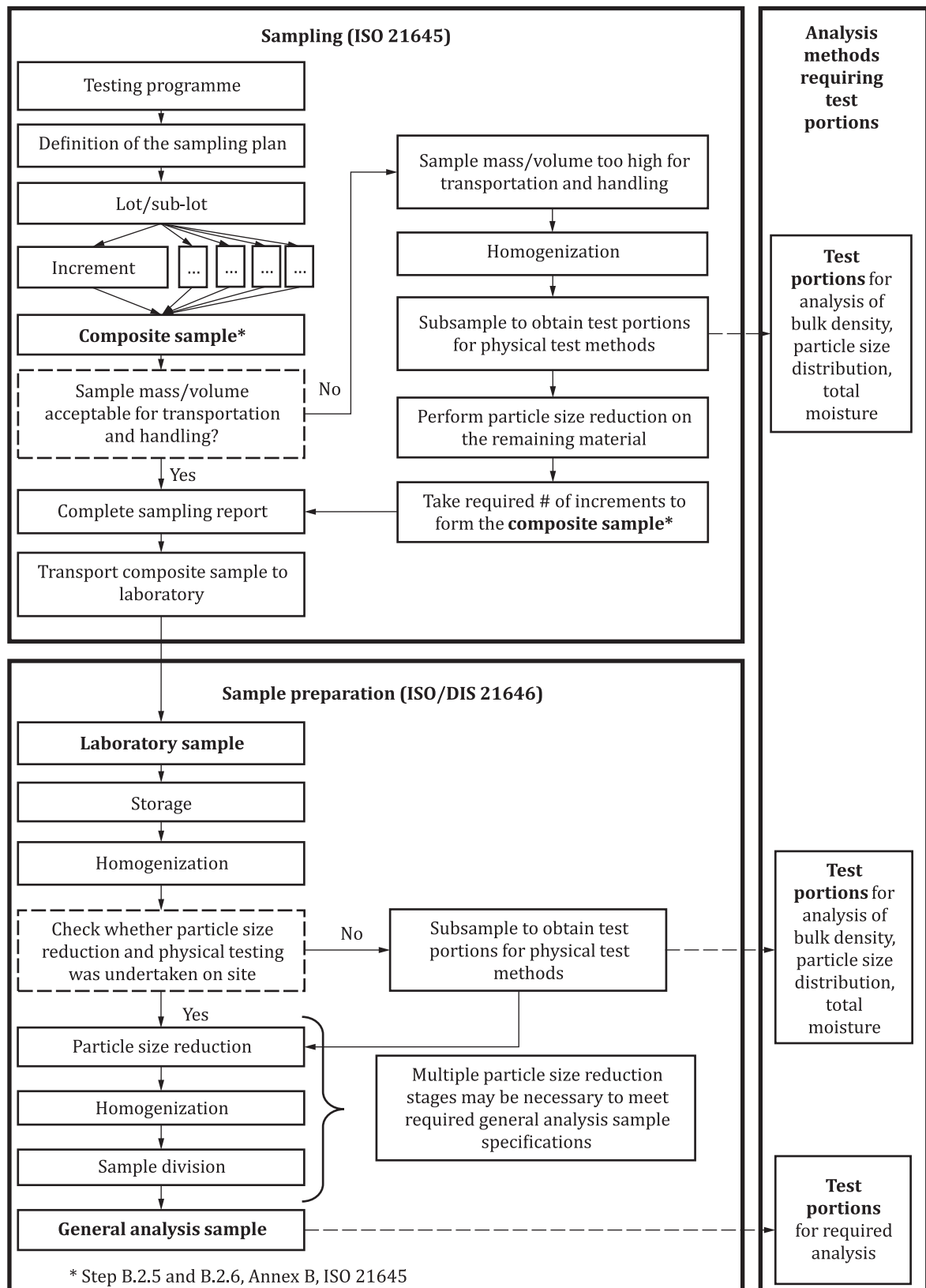


Figure 1 — Links between the essential elements of a testing program

Solid recovered fuels — Methods for sampling

1 Scope

This document specifies methods for taking samples of solid recovered fuels for example from production plants, from deliveries or from stock. It includes manual and mechanical methods.

It is not applicable to solid recovered fuels that are formed by liquid or sludge, but it includes dewatered sludge.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 21637, *Solid recovered fuels — Terminology, definitions and descriptions*

ISO 21640:—¹⁾, *Solid recovered fuels — Specifications and classes*

ISO 21644, *Solid recovered fuels — Methods for the determination of biomass content*

ISO 21654, *Solid recovered fuels — Determination of calorific value*

ISO 21656, *Solid recovered fuels — Determination of ash content*

ISO 21660-3, *Solid recovered fuels — Determination of moisture content using the oven dry method — Part 3: Moisture in general analysis sample*

ISO 21663, *Solid recovered fuels — Methods for the determination of carbon (C), hydrogen (H) and nitrogen (N) content*

ISO 22167, *Solid recovered fuels — Determination of the content of volatile matter*

EN 15408, *Solid recovered fuels — Method for the determination of sulphur (S), chlorine (Cl), fluorine (F) and bromine (Br) content*

EN 15410, *Solid recovered fuels — Method for the determination of the content of major elements (Al, Ca, Fe, K, Mg, Na, P, Si, Ti)*

EN 15411, *Solid recovered fuels — Methods for the determination of the content of trace elements (As, Ba, Be, Cd, Co, Cr, Cu, Hg, Mo, Mn, Ni, Pb, Sb, Se, Tl, V and Zn)*

EN 15415-1, *Solid recovered fuels — Determination of particle size distribution — Part 1: Screen method for small dimension particles*

EN 15415-2, *Solid recovered fuels — Determination of particle size distribution — Part 2: Maximum projected length method (manual) for large dimension particles*

EN 15415-3, *Solid recovered fuels — Determination of particle size distribution — Part 3: Method by image analysis for large dimension particles*

CEN/TS 15401, *Solid recovered fuels — Determination of bulk density*

CEN/TR 15404, *Solid recovered fuels — Methods for the determination of ash melting behaviour by using characteristic temperatures*

1) Under preparation. Stage at the time of publication ISO/FDIS 21640.

CEN/TS 15405, *Solid recovered fuels — Determination of density of pellets and briquettes*

CEN/TS 15406, *Solid recovered fuels — Determination of bridging properties of bulk material*

CEN/TS 15412, *Solid recovered fuels — Methods for the determination of metallic aluminum*

CEN/TS 15414-1, *Solid recovered fuels — Determination of moisture content using the oven dry method — Part 1: Determination of total moisture by a reference method*

CEN/TS 15414-2, *Solid recovered fuels — Determination of moisture content using the oven dry method — Part 2: Determination of total moisture by a simplified method*

CEN/TS 15639, *Solid recovered fuels — Determination of mechanical durability of pellets*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21637 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1 coefficient of variation

estimate of the standard deviation of a population from a *sample* (3.28) of *n* results divided by the mean of that sample

Note 1 to entry: The coefficient of variation is frequently stated as a percentage.

Note 2 to entry: Adapted from Eurachem/Citac Guide CG 4^[4].

3.2 composite sample mass

amount of *sample* (3.28) taken from a *lot* (3.11) or a *sub-lot* (3.40) consisting of all the *increments* (3.9)

3.3 distribution factor

correction factor for the *particle size distribution* (3.20) of the material to be sampled

[SOURCE: ISO 21637:2020, 3.17]

3.4 drop flow

material flow falling over an overflow point or a drop point in a transport system

[SOURCE: ISO 21637:2020, 3.18]

3.5 duplicate sample

two *samples* (3.28) taken under comparable conditions

Note 1 to entry: This selection may be accomplished by taking units adjacent in time or space.

Note 2 to entry: The replicate sample is usually used to estimate sample variability.

[SOURCE: ISO 21637:2020, 3.23, modified – Note 2 to entry has been added.]

3.6 general analysis sample

sub-sample (3.41) of a *laboratory sample* (3.10) having a nominal top size of 1 mm or less and used for a number of chemical and physical analyses

3.7**heterogeneity**

degree to which a property or type of particle of a *solid recovered fuel* (3.34) is not uniformly distributed throughout a quantity of material

[SOURCE: ISO 21637:2020, 3.36]

3.8**homogeneity**

degree to which a property or type of particle of a *solid recovered fuel* (3.34) is uniformly distributed throughout a quantity of material

[SOURCE: ISO 21637:2020, 3.37]

3.9**increment**

portion of *solid recovered fuel* (3.34) extracted from a *lot* (3.11) or *sub-lot* (3.40) in a single operation of the *sampling* (3.30) device

[SOURCE: ISO 21637:2020, 3.39]

3.10**laboratory sample**

composite *sample* (3.28) received by the laboratory on which *sample preparation* (3.29) procedures for analysis are undertaken

Note 1 to entry: When the laboratory sample is further prepared by mixing, subdividing, particle size reduction or by combinations of these operations, the result is the general analysis sample. A test portion is removed from the general analysis sample for the performance of the test or for analysis. When no preparation of the laboratory sample is required, the test portion may be taken directly from the laboratory sample.

3.11**lot**

defined quantity of fuel for which the quality is to be determined

Note 1 to entry: A lot may be divided into sub-lots.

[SOURCE: ISO 13909-1:2016, 3.16^[5]]

3.12**mechanical durability**

ability of densified fuels to remain intact during handling and transportation

Note 1 to entry: Typical measures of resistance are shock and/or abrasion as a consequence of handling and transportation processes, characterized by disintegration and fines formulation.

Note 2 to entry: Examples are briquettes and pellets.

[SOURCE: ISO 21637:2020, 3.41]

3.13**minimum increment mass**

minimum dimension or mass of the increment that is taken from a *lot* (3.11) in a single operation of the *sampling* (3.29) device from the point of view of preserving its representativeness

3.14**minimum sample mass**

minimum amount or dimension of the sample required during *sampling* (3.30) and *sample preparation* (3.29) from the point of view of preserving its representativeness

Note 1 to entry: The minimum sample mass is at least equal to the increment mass multiplied by the number of increments, and is linked directly to the nominal top size.

3.15

moisture

water removable under specific conditions

Note 1 to entry: See also *total moisture* (3.43).

[SOURCE: ISO 21637:2020, 3.46, modified – Note 1 to entry has been added.]

3.16

nominal minimum size

d_{05}

smallest aperture size of the sieve used for determining the *particle size distribution* (3.20) of solid fuels through which at least 5 % by mass of the material passes

3.17

nominal top size

d_{95}

smallest aperture size of the sieve used for determining the *particle size distribution* (3.20) of *solid recovered fuels* (3.34) through which at least 95 % by mass of the total material passes through the sieve

[SOURCE: ISO 21637:2020, 3.48]

3.18

particle density

density of a single particle

Note 1 to entry: Pores within the particle are included.

[SOURCE: ISO 21637:2020, 3.52]

3.19

particle size

size of the fuel particles as determined in a solid fuel

Note 1 to entry: Different methods of determination can give different results.

Note 2 to entry: See also *particle size distribution* (3.20).

3.20

particle size distribution

proportions of various *particle sizes* (3.19) in a solid fuel

3.21

particle size reduction

reduction of the *nominal top size* (3.17) of a *sample* (3.28) or *sub-sample* (3.41)

3.22

planned increment mass

planned dimension or mass of the *increment* (3.9) that is taken from a *lot* (3.11) in a single operation of the *sampling* (3.30) device

3.23

planned sample mass

sample (3.28) amount or dimension that is planned to be taken during *sampling* (3.29)

Note 1 to entry: The planned sample mass is derived from the minimum sample mass and includes additional considerations regarding the sampling procedure, practical handling and storage and the required sample amounts for analysis.

Note 2 to entry: The planned sample mass can be equal to the minimum sample mass.

3.24**precision**

closeness of agreement between independent test/measurement results obtained under stipulated conditions

Note 1 to entry: Precision depends only on the distribution of random errors and does not relate to the true value or the specified value.

Note 2 to entry: The measure of precision is usually expressed in terms of imprecision and computed as a standard deviation of the test results or measurement results. Less precision is reflected by a larger standard deviation.

Note 3 to entry: Quantitative measures of precision depend critically on the stipulated conditions.

[SOURCE: ISO 3534-2:2006, 3.3.4^[6], modified – Second sentence of Note 3 to entry has been removed.]

3.25**producer**

organization or unit responsible for the production of *solid recovered fuel* (3.34)

Note 1 to entry: The producer can also be the supplier of the fuel.

Note 2 to entry: The producer may not directly produce or process non-hazardous waste into solid recovered fuel but may receive material appropriate to its requirements and already meeting the minimum criteria of ISO 21640:—.

[SOURCE: ISO 21637:2020, 3.60]

3.26**random sampling**

taking a *sample* (3.28) at a random location within a specified range or from a specified *lot* (3.11) such that every portion of the *solid recovered fuel* (3.34) would have the same chance of being part of the sample

Note 1 to entry: A random location is determined by lot.

3.27**replicate sampling**

taking of *increments* (3.9) at intervals, which are combined in rotation into different containers to give two or more *samples* (3.28) of approximately equal mass

Note 1 to entry: The replicate sampling is usually used to estimate sample variability.

3.28**sample**

quantity of material, from a larger amount for which the quality is to be determined

Note 1 to entry: See also *increment* (3.9).

[SOURCE: ISO 21637:2020, 3.63, modified – Note 2 and 3 to entry have been removed.]

3.29**sample preparation**

actions taken to obtain representative *laboratory sample* (3.10) or *test portions* (3.42) from the original sample as received

[SOURCE: ISO 21637:2020, 3.66]

3.30**sampling**

process of drawing or constituting a *sample* (3.28)

[SOURCE: ISO 21637:2020, 3.68]

3.31

sampling plan

predetermined procedure for the selection, withdrawal, preservation, transportation and preparation of the portions to be removed from a population as a *sample* ([3.28](#))

[SOURCE: ISO 21637:2020, 3.70]

3.32

sampling record

report which serves as a check list and provides the investigator with all necessary information about the *sampling* ([3.30](#)) techniques applied at the site and any additional important information

[SOURCE: ISO 11074:2015, 4.4.26^[7], modified – Part of definition has been removed as irrelevant to the context of this document.]

3.33

shape factor

factor that corrects the *minimum sample mass* ([3.14](#)) if the particles in a lot have not a regular shape (e.g. spherical or cubic)

[SOURCE: ISO 21637:2020, 3.72]

3.34

solid recovered fuel

solid fuel for energy purposes according to ISO 21640:— derived from non-hazardous waste

Note 1 to entry: A number of terms can be used to describe fuels from waste that might (but not always) qualify as solid recovered fuels. For example, refuse derived fuel, refuse derived paper and plastics densified fuel, waste derived fuel, shredded light fraction, sewage sludge, end of life wood, fuel composed of either municipal solid waste, industrial waste, commercial waste, construction and demolition waste, animal waste (e.g. meat and bone meal).

Note 2 to entry: This definition does not consider the value of the waste.

Note 3 to entry: Whether the input material is hazardous or non-hazardous is determined through national laws and directives or by categorization of the fuel through the annexes in the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal.

[SOURCE: ISO 21637:2020, 3.75]

3.35

specification

document stating requirements

Note 1 to entry: See also *specification of solid recovered fuels* ([3.36](#)).

[SOURCE: ISO 9000:2015, 3.8.7^[8], modified - Example and notes to entry have been removed/replaced.]

3.36

specification of solid recovered fuels

list of properties that characterize *solid recovered fuel* ([3.34](#))

Note 1 to entry: A template for such specification is given in ISO 21640:—.

[SOURCE: ISO 21637:2020, 3.76, modified – Note 1 to entry has been added.]

3.37

static lot

lot ([3.11](#)) that is not in motion during the *sampling* ([3.30](#)), or transported by a conveyor or alternative transport system

[SOURCE: ISO 21637:2020, 3.77]

3.38**stratified random sampling**

stratified *sample* (3.28) constituting by increments which are taken randomly within each stratum

3.39**stratified sampling**

sampling (3.30) constituting by increments taken from identified subparts (strata) of the parent population

Note 1 to entry: Definition derived from ‘stratified sample’ as defined in ISO 21637:2020, 3.78.

3.40**sub-lot**

part of a *lot* (3.11) for which a test result is required

[SOURCE: ISO 21637:2020, 3.81]

3.41**sub-sample**

portion of a *sample* (3.28)

Note 1 to entry: A sub-sample is obtained by procedures in which the items of interest are randomly distributed in part of equal or unequal size.

Note 2 to entry: A sub-sample may be either a portion of the sample obtained by selection or division of the sample itself, or the final sample of a multistage sample preparation.

[SOURCE: ISO 21637:2020, 3.82]

3.42**test portion**

sub-sample (3.41) either of a *laboratory sample* (3.10) or a test sample required for the specific measurement

Note 1 to entry: The test portion can be taken from the laboratory sample directly if no preparation of sample is required (e.g. for bulk density determination or particle size distribution).

[SOURCE: ISO 21637:2020, 3.83, modified – Note 1 to entry has been added.]

3.43**total moisture****moisture content**

moisture in a fuel measured under specific conditions on as received basis

3.44**trueness**

closeness of agreement between the expectation of a test result or a measurement result and a true value

Note 1 to entry: The measure of trueness is usually expressed in terms of bias.

Note 2 to entry: Trueness is sometimes referred to as “accuracy of the mean”. This usage is not recommended.

Note 3 to entry: In practice, the accepted reference value is substituted for the true value.

Note 4 to entry: The determination of the exact trueness for waste and from waste derived materials such as solid recovered fuels is by definition not possible.

[SOURCE: ISO 3534-2:2006, 3.3.3, modified - Note 4 to entry has been added.]

4 Symbols

For the purposes of this document, the following symbols apply.

b	is the breadth of the flow, in m
C_V	is the coefficient of variation
d_{05}	is the nominal minimum size of a particle, in mm
d_{95}	is the nominal top size of a particle, in mm
f	is the shape factor, in m^3/m^3
G	is the conveyor load, in kg/m
g	is the correction factor for distribution in the particle size
m	is mass, in kg
n	is the number of increments to be taken per lot
p	is the fraction of the particles with a specific characteristic (such as a specific contaminant), in kg/kg, and is equal to 0,1
V	is volume, in m^3
v	is conveyor velocity, in m/s
Φ_d	is the drop flow, in kg/s
λ_b	is the bulk density of the solid recovered fuel, in kg/m^3
λ_p	is the particle density, in kg/m^3

5 Principle

Every particle in the lot or sub-lot to be represented by the sample should have an equal probability of being included in the sample. When this principle cannot be applied in practice, the sampler shall note the limitations in the sampling plan.

6 Development of a sampling plan

6.1 Principle

The sampling plan shall be drawn up before the sampling takes place. Samples shall be taken representatively from a pre-defined lot of solid recovered fuel on the basis of this sampling plan.

The sampling plan shall be drawn up on the basis of the objective for the sampling process, using the available data on a solid recovered fuel and the accessibility of the lot. The procedure specified in [Annex A](#) and the sampling plan presented in [Annex B](#) shall be used. [Annex C](#) provides an example of a sampling plan. The sampling plan shall be completed. If certain estimates concerning specific parameters relating to the lot cannot be determined with sufficient certainty on the basis of the information available, these estimates shall be verified in the field. If necessary, the sampling plan shall be adjusted in the field and the deviations shall be reported in the sampling record. [Figure 2](#) shows the actions that are necessary for the development of a sampling plan.

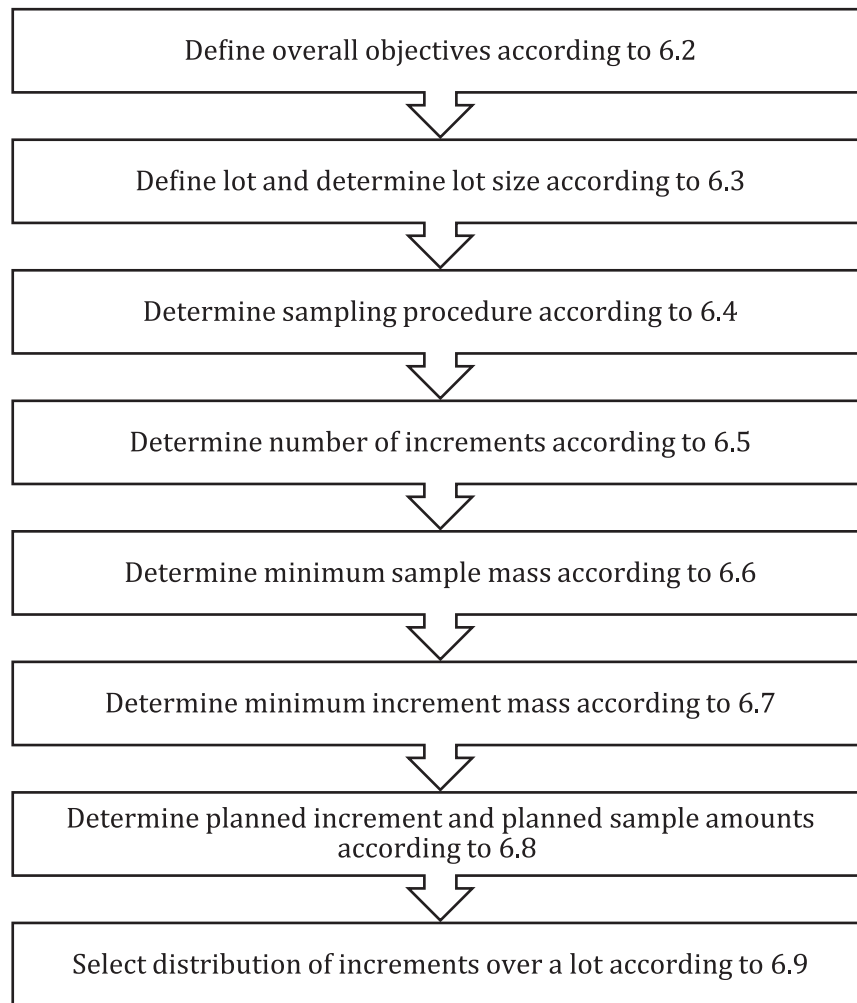


Figure 2 — Necessary elements for the development of a sampling plan

6.2 Definition of overall objectives

The sampling plan shall specify the objectives of the sampling program through consultation with all relevant parties. Parties that can be relevant are the client, the producer of the solid recovered fuel, the sampler or authorities. The sampling plan shall meet the requirements of objectives.

NOTE Examples of objectives for sampling are to determine the fuel quality, to get information for processing plant control, to estimate potential emission risks or to determine the necessary parameters for claiming renewable energy subsidies.

The sampling plan(s) shall identify any special precautions to be followed to minimize working hazards related to the sampling.

6.3 Definition of a lot and determining lot size

6.3.1 General

The lot shall be defined on the basis of the way in which the material is or has been produced and/or is offered (upon delivery, upon acceptance, upon storage or in store, for instance). The lot size relates to a quantity of material delivered on the basis of one specification and production process. This material is agreed on by contract as a unit, and is identifiable as such. The maximum weight of a lot or sub-lot, for sampling purposes, shall be no more than $1,5 \times 10^6$ kg. If the contracted lot weighs more than

$1,5 \times 10^6$ kg, it shall be split into two or more separate lots in order to maintain the lot size below or at the maximum lot size. The lot definitions in [6.3.2](#) to [6.3.5](#) are possible.

NOTE It is not always necessary to sample every lot in a production period. The sampling frequency is usually given by specific agreements with contractors and/or regulators.

6.3.2 Definition of a lot in case of sampling from a material flow

The lot shall be either defined as a period of production or as the period in which a certain amount of solid recovered fuel is transported through the material flow.

6.3.3 Definition of a lot in case of transport by a vehicle

The total lot shall comprise the contents of the entire series of one or more vehicles used to transport the lot. A vehicle can be both a lorry or a railway wagon.

6.3.4 Definition of a lot in case of transport by ship

The total lot shall comprise to the contents of the entire series of material with the same specifications as agreed on in a contract of one or more ships used to transport the lot.

A lot can also relate to the quantity of material that is transported and delivered by separate compartments in the ship and by different specifications agreed on in a contract. If one ship contains several lots (i.e. quantities of material that differ from each other with regard to the specifications agreed on in a contract with the producer of the material beforehand), these lots shall be stored in separate compartments in the ship. In that case, a lot relates to the quantity of material that is transported and delivered by separate compartments.

6.3.5 Definition of a lot in case of sampling from a static lot

If the material has been stored at the producer's or purchaser's premises in a store, the static lot relates to the quantity of material with the specifications agreed on beforehand in a contract within a demarcated area.

6.4 Determination of the sampling procedure

The applied sampling method shall result in a representative sample from the lot. Therefore, sampling from a moving transport medium is preferred. The following sampling methods are available and shown in the order of preference, in which the methods shall be used (i.e. representativeness of sample decreases from top to bottom of this list):

- a) mechanically from a drop flow, for which the method specified in Annex H.4 shall be used;
- b) mechanically from a moving conveyor, for which the method specified in Annex H.5 shall be used;
- c) manually from a stationary conveyor, for which the method specified in Annex H.6 shall be used;
- d) manually from a drop flow, for which the method specified in Annex H.4 shall be used;
- e) manually from a vehicle, for which the method specified in [Annex I](#) shall be used;
- f) from a (temporary) store, for which the method specified in [Annex I](#) shall be used.

A less representative method shall only be chosen, if a more representative one is not possible in the existing situation.

6.5 Determination of the number of increments

The number of increments shall be at least 24.

EXAMPLE This means that for a lot size of 120 t an increment is taken on the average every 5 t and for a lot size of 1 320 t an increment is taken on the average every 55 t.

It is possible to take more increments. Reasons for taking more increments can be:

- if more sample material is required, e.g. for duplicate analyses or as contra sample to be stored;
- if it is easier to stratify the lot in different number of strata, e.g. $5 \times 5 = 25$ strata.

NOTE The number of increments was fixed to 24 based on practical considerations. The main reason for this choice is the large differences that exist between solid recovered fuels. It seemed not very practical to calculate the number of increments for each situation before starting with sampling. More backgrounds on this choice can be found in the QUOVADIS reports^[10,11].

6.6 Determination of minimum sample mass

The minimum sample mass shall be determined according to the specifications in [Annex E](#). The minimum sample mass shall be reported in the sampling plan.

6.7 Determination of the minimum increment mass

6.7.1 Determination of minimum increment mass for material flows

If samples are taken from a material flow or from a conveyor, the minimum increment mass shall be determined using the instructions in [Annex F](#), in which a distinction is made between the following situations for the purposes of determining the increment mass:

- mechanical and manual sampling from a drop flow;
- sampling from a conveyor.

NOTE For the purposes of determining the planned increment mass, no distinction is made between mechanical sampling from a moving conveyor and manual sampling from a stationary conveyor.

6.7.2 Determination of the minimum increment mass for static lots, vehicles or ships

If samples are taken from static lots, vehicles (e.g. lorry, heavy goods vehicle, railway wagon) or ships, the minimum increment mass shall be determined using the instructions in [Annex G](#).

6.8 Determination of the planned increment and planned sample amounts

The planned sample mass is preferably at least equal to the minimum sample mass to ensure representative samples from a statistical point of view. Practical considerations to obtain a workable sample mass can lead to deviations from this starting point. In case of sampling fluff-type solid recovered fuel from static lots, the planned sample mass is determined from the planned increment mass multiplied with 24 increments which leads to higher sample masses (composite sample mass) than the calculated minimum sample mass.

[Annex J](#) shall be used to verify whether the minimum sample mass (6.6) is at least large enough to perform all necessary analyses on the sample. The planned sample mass can be equal to the minimum sample mass when the requirements from [Annex J](#) are also fulfilled and can be larger than the minimum sample mass when additional sample is required. The planned sample mass shall be reported in the sampling plan.

NOTE Additional sample mass can be required in case duplicate analysis is wanted, when contra samples are needed or other needs.