
International Standard



7002

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Agricultural food products — Layout for a standard method of sampling from a lot

Produits agricoles alimentaires — Présentation d'une méthode normalisée d'échantillonnage à partir d'un lot

First edition — 1986-12-15

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7002 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Agricultural food products — Layout for a standard method of sampling from a lot

1 Scope and field of application

This International Standard establishes a general layout for standard methods of sampling from lots of agricultural food products.

It gives only general rules for drafting standard methods of sampling. It cannot be used itself, therefore, for sampling products; testing, inspection and acceptance procedures are dealt with to such an extent as to make the user aware of the meaning of further references.

2 General

2.1 Use of the layout

In making use of the layout (see clause 3), it should be remembered that it is for guidance only, and it will have to be adapted in each case to suit individual requirements. Thus, some of the clauses or headings may be omitted in certain instances whilst, in others, additions may be needed in appropriate places to cater for special requirements.

2.2 Plan of the document

In all cases, when drafting a method of sampling, clauses should be arranged in the order given in the layout, if they are to be included in the document.

In this way, the drafter of the method will find it easier to set out systematically all the information needed, with less risk of overlooking any important item. Moreover, the user of the document, knowing that it conforms to this layout, will be able more readily to refer to any clause, whatever may be the origin and scope and field of application of the method. (This is particularly important when considering a partial translation of a method, and in comparing different methods or different versions of a method.)

2.3 Numbering of clauses and sub-clauses

Clauses and sub-clauses shall be numbered consecutively throughout the document, in accordance with the point numbering system described in ISO 2145, *Numbering of divisions and subdivisions in written documents*.

No provision should be made in this sequence of numbers for numbers referring to clauses or sub-clauses of the layout which have not been included in the document (see 2.1).

This consecutive numbering scheme is also recommended when dealing with a broadly based document embracing several methods of sampling, or variants of a given method, constituting different sections of a document.

2.4 Terminology

Use should be made of standardized sampling terminology, including statistical concepts, in particular that given in the International Standards prepared by ISO/TC 69, *Applications of statistical methods*.

In some cases, terms other than those standardized by ISO/TC 69 are used in trade in agricultural food products; definitions relating to the sampling of agricultural food products are given in annex A, and a list of the equivalent English and French terms in annex B. Where traditional usage differs from the standardized terminology, a reference should be made to the standard term, for example by including it as a synonym for the traditional term.

When several synonyms may express the same concept in one of the official ISO languages, preference should be given to that most closely corresponding to the term or terms in the other official ISO languages.

Where there is no similarity of terms in the different languages to express the same concept, and where there exist internationally recognized symbols or abbreviations, these should be used after the terms in the different languages, in order to assist readers of all languages.

2.5 Choice and wording of methods of sampling

As far as possible, the same sampling methods, used as a basis for the assessment of a given characteristic for a given product, should be adopted in all International Standards for related products; the wording used should be as similar as possible. An exception may be made where, in the field in question, this will be contrary to a reasonable and well-established practice which it is desired to retain.

3 Preferred arrangement (for comments on individual headings and clauses, see clause 4)

- 1 Title
- 2 Introduction
- 3 Scope
- 4 Field of application
- 5 References
- 6 Definitions
- 7 Principle (of the method of sampling)
- 8 Administrative arrangements
 - 8.1 Sampling personnel
 - 8.2 Representation of parties concerned
 - 8.3 Health, safety and security precautions
 - 8.4 Preparation of a sampling report
- 9 Identification and general inspection of the lot prior to sampling
- 10 Sampling equipment and ambient conditions
- 11 Sample containers and packing
- 12 Sampling procedures
 - 12.1 Sample size
 - 12.2 Taking of increments
 - 12.3 Preparation of bulk sample and reduced samples
 - 12.4 Selection of samples of prepacked products
- 13 Packing, sealing and marking of samples and sample containers
 - 13.1 Filling and sealing of sample containers
 - 13.2 Marking
 - 13.3 Packing samples for storage and/or transportation
- 14 Precautions during storage and transportation of samples
- 15 Sampling report
 - 15.1 Administrative details
 - 15.2 Details of unit packs or enclosure containing the lot
 - 15.3 Material sampled
 - 15.4 Sampling method
 - 15.5 Marking and sealing of samples
- 16 Annexes

4 Rules for drafting individual elements and clauses

NOTE — The following rules supplement those laid down in Parts 2 and 3 of the *Directives for the Technical Work of ISO*.

4.1 Title

The title of the International Standard shall express as concisely as possible, and without ambiguity, the contents of the document, indicating in the following order:

- a) the product concerned, in the form in which it figures in the lot to be sampled;
- b) the category of samples finally to be obtained, and the purpose for which the sample(s) is/are intended (if specific).

Example:

ISO 6670, *Instant coffee in cases with liners — Sampling*.

4.2 Introduction

The introduction, if any, to the International Standard shall be drafted to suit the user, giving, as appropriate, a short background to the choice of the method selected, and of the layout adopted, together with any other information required for the understanding and use of the International Standard.

4.3 Scope

This clause shall define the content of the International Standard, i.e. the features of the operations called for, and the product or products to which it applies. It shall reflect and amplify the title of the International Standard.

For convenience, this element should be combined with element 4.4 under the heading "Scope and field of application".

Mention shall be made, where appropriate, of the purposes for which the sample(s) is/are required. These may, in particular, relate to one or more of the following purposes of sampling:

- a) **commercial purposes:** for example, to procure or prepare a sample:
 - 1) to serve as a basis for an offer for sale,
 - 2) for examination to verify that the material to be offered for sale satisfies the manufacturer's sales specification,
 - 3) for examination as to whether the delivery complies with a contract specification;
- b) **technical purposes:** for example, to procure or prepare a sample:
 - 1) for examination to determine one or more of the characteristics of the material, including those affecting health and safety (for example, for foods, the presence

of harmful contaminants from agriculture or processing, the presence of bacteria or their metabolites causing various diseases or food deterioration),

- 2) for quality control or quality inspection during the process of production or manufacture,
- 3) for control and inspection of the net contents of unit packages,
- 4) for examination to establish the identity of an unknown material,
- 5) for examination to confirm the identity of a supposedly known material,
- 6) for examination to determine, from its characteristics, the source of a given material,
- 7) to determine the normal and natural composition of materials so that significant deviations may be detected,
- 8) for examination to verify that a given material is of the type or quality suitable for the purpose for which it is intended or suggested to be used,
- 9) to monitor the changes in a property with time;
- c) **legal purposes:** for example, to procure or prepare a sample:
 - 1) for examination to verify that the material being offered for sale, or for admission to a country, satisfies statutory requirements (consumer protection, hygiene control, etc.),
 - 2) for retention as a reference sample,
 - 3) for examination in connection with criminological investigations,
 - 4) for examination in connection with processes which discharge the material into the surroundings, and for which statutory control exists as to their nature and composition.

NOTE — The preparation of test samples from laboratory samples does not fall within the scope of a method for sampling from a lot.

4.4 Field of application

This clause shall contain all the information required to enable the user to judge whether the International Standard is applicable to the product or products being considered, or whether limitations exist, bearing in mind:

- a) the purpose for which the samples are required;
- b) the maximum acceptable sampling error if this purpose is to be achieved within the precision limits deduced from, for example, probability levels, using these samples and taking into account the tests to which they are to be submitted.

It shall contain in particular an indication of the product or products to which the method applies, and the limits between which the method can be used without alteration. The limits shall take into account the incidence of variability within the lot and the need, for instance, to insert ancillary operations, such as sorting into sub-lots, and particular examinations on the site or in the laboratory. The various factors to be considered in defining the field of application of the document include the following:

- a) intended purpose of the product (for example, direct consumption, raw material, intermediates, process additive, by-product for disposal, or finished material);
- b) physical state of the product (for example, liquid, powder, coarse lumps, gas);
- c) size of the consignment or lot;
- d) whether the method is applicable to bulk or packed material; in the latter case, if necessary, the size, nature and number of containers should also be indicated;
- e) the type of examination for which the samples are required (for example, physical, chemical, sensory, bacteriological or combined tests);
- f) the level of distribution in trade (for example, wholesale or retail).

4.5 References

This clause shall give a complete list of other documents which are indispensable for the application of the International Standard.

NOTE — This list is not intended to include documents which have merely served as references in the preparation of the standard; such documents can be mentioned, if necessary, in the clause or sub-clause concerned.

4.6 Definitions

The terms used in the document shall be selected as far as possible from those defined in annex A to this International Standard, to which reference shall be made. Any such terms, and any additional terms, shall be given with their definitions in this clause, if it is desired to reproduce them for the convenience of the user of the document, or if they are required for the proper understanding of the text. (See also 2.4.)

4.7 Principle (of the method of sampling)

This clause should briefly define the essential steps of the method to be used, giving the reasons that justify the choice of the particular procedures. The nature of the product to be sampled, the purpose of sampling and an appropriate sampling plan set at the desired level of inspection, often determine the method to be used.

This clause should include the operating characteristic of the sampling plan used, and any assumptions made in calculating this characteristic. The method of sampling selected is dependent

on the principle that has been adopted, as well as on the field of application. Examples of different purposes for which sampling is carried out are:

- a) sampling to assess the heterogeneity of a bulk lot;
- b) sampling to assess the variability between individuals of a lot and the type of frequency distribution in that lot;
- c) sampling to assess the mean of a characteristic of a lot;
- d) sampling to assess the variability between different parts of a lot (zone sampling, stratified sampling);
- e) sampling to assess the number of defects in a lot, taking into consideration the severity of defects;
- f) sampling to assess the variability, with time, of a product in movement (continuous, kinetic, or periodic systematic sampling);
- g) sampling as part of other more complex schemes such as:
 - 1) quota sampling, which involves, in the case of a heterogeneous lot, taking aliquot parts from each of the several groups constituting a lot,
 - 2) sequential sampling, which involves inspection, testing, or both, as well as sampling.

The reasons shall also include an indication as to whether the method of sampling is based partly or completely on statistical principles, or follows an established scheme of an arbitrary nature based on experience or expediency (composite sample, multiple sampling, multi-stage sampling etc.). Wherever possible, sampling should be based on statistical principles, and if so the estimated or assessed sampling errors shall be stated. To enable the sampling risks to be assessed in the case of products where the distribution of the variable is unknown, an assumption of normal distribution is often made.

4.8 Administrative arrangements

This clause shall briefly indicate the necessary administrative arrangements, if any, to which it is desired to draw the attention of the user of the International Standard.

4.8.1 Sampling personnel

Under this heading, particulars of the number and type of sampling personnel required, including requirements for specialist and supervisory staff, may be given. Where appropriate, an indication of the training and qualifications should be given. In the case of sampling for statutory purposes, attention shall be drawn to the need for officially appointed sampling officers.

NOTE — In certain cases, it may be useful to refer to the existence of specialized sampling organizations which undertake sampling under contract for commercial or arbitration purposes.