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British Standard

# Sampling tobacco and tobacco products

## Part 3. Methods of sampling cigarettes

[ISO title : Cigarettes–Sampling]

Echantillonnage du tabac et des produits du tabac
Partie 3. Méthode d'échantillonnage des cigarettes

Probenahme von Tabak und Tabakerzeugnissen
Teil 3. Verfahren zur Probenahme von Zigaretten

British Standards Institution

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## National foreword

This Part of BS 6245 has been prepared under the direction of the Food and Agriculture Standards Committee. It is identical with ISO 8243 : 1988 'Cigarettes–Sampling' published by the International Organization for Standardization (ISO) and in the preparation for which the UK played a full part.

**Terminology and conventions.** The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some teminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Part of BS 6245'.

### Cross-references

| International standard | Corresponding British Standard |
|---|---|
| ISO 2602 : 1980 | BS 2846 Guide to statistical interpretation of data<br>Part 2 : 1981 Estimation of the mean: confidence interval<br>(Identical) |
| ISO 3308 : 1986 | BS 5668 Routine analytical cigarette smoking machine<br>Part 1 : 1987 Specification and standard conditions<br>(Identical) |
| ISO 3400 : 1976 | BS 5202 Methods for chemical analysis of tobacco and tobacco products<br>Part 7 : 1977 Determination of alkaloids in cigarette smoke condensate (spectrophotometric method)<br>(Identical) |
| ISO 3534 : 1977 | BS 5532 Statistical terminology<br>Part 1 : 1978 Glossary of terms relating to probability and general terms relating to statistics<br>(Identical) |
| ISO 5725 : 1986 | BS 5497 Precision of test methods<br>Part 1 : 1987 Guide for the determination of repeatability and reproducibility for a standard test method by inter-laboratory tests<br>(Identical) |

There are no British Standards corresponding to ISO 4387 and ISO 8453 (see Annex) but, as these references are supplied for information only, the lack of corresponding British Standards does not affect the validity of this Part of BS 6245.

**Compliance with a British Standards does not of itself confer immunity from legal obligations.**

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# Sampling tobacco and tobacco products

Part 3. Methods of sampling cigarettes

## 0 Introduction

Existing national standards, rules, regulations and laws were taken into account when preparing this International Standard and two different procedures are described :

— sampling at the point of sale;

— sampling at the producer's premises.

Sophisticated sampling plans are often too expensive to be used. The two procedures in this International Standard are both simple and reliable.

Sampling is normally carried out at one point in time, for example of cigarettes available for distribution from a factory or available on the market on a particular day. When a sample is required which represents cigarettes available over an appreciable period of time (e.g. cigarettes representing several months' production) a number of sub-period samples will be taken at different times and the results combined.

The sampling plan depends upon the purpose of sampling, for example determination of physical properties or of smoke constituents.

Detailed sampling plans are given in the annex.

## 1 Scope and field of application

This International Standard specifies two methods for sampling of cigarettes for the preparation of laboratory samples. Different procedures are specified according to whether sampling is undertaken at the point of sale, at the producer's premises or importer's warehouses.

Either procedure may be used for each of the two methods :

a) At a given time to provide an instantaneous estimate of one or more characteristics of cigarettes. Sampling is carried out within as short a period as possible, not exceeding 14 days. This is called "Sampling at one point in time".

b) Over a period to provide a continuous estimate of one or more characteristics of cigarettes. It can be considered for practical purposes as a series of samples at one point in time. This is called "Sampling over a period of time".

The various possibilities are shown in the table.

## 2 References

ISO 2602, *Statistical interpretation of test results — Estimation of the mean — Confidence interval.*

ISO 3534, *Statistics — Vocabulary and symbols.*

ISO 5725, *Precision of test methods — Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests.*

**Table — Sampling possibilities**

| Sampling procedure | A | | B | |
|---|---|---|---|---|
| | at the point of sale | | at producer's premises or importer's warehouse | |
| | 1 | 2 | 1 | 2 |
| **Sampling mode** | at one time (instantaneous) (see 4.1) | over a period (continuous) (see 5.1) | at one time (instantaneous) (see 4.2) | over a period (continuous) (see 5.2) |
| **Purpose** | any test | | | |

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## 3 Definitions

**3.1 sale unit** : A quantity of cigarettes ready to be offered for sale to the public. The commonly sold packet of 20 cigarettes is used as the basis of this International Standard, but cigarettes are sold loose and in other size packets.

**3.2 population** : The aggregate of sale units of the cigarette to be sampled, intended for sale to consumers in a given geographical area in a given time period.

The definition includes different sub-populations, two of which are :

**3.2.1 population available to consumers** : The aggregate of sale units in retail outlets in a given geographical area, at any time in a given time period.

**3.2.2 population manufactured for sale** : The aggregate of sale units at a manufacturer's premises available for commercial distribution in a given geographical area at any time in a given time period.

**3.3 increment** : The sample of cigarettes taken at one time, at one sampling point, to be combined to produce the gross sample.

**3.4 gross sample** : The aggregate of the increments.

**3.5 sub-period sample** : That part of the whole sample taken in a brief period when sampling over a long period of time.

**3.6 laboratory sample** : The sample intended for laboratory inspection or testing and which is representative of the gross sample or the sub-period sample.

**3.7 test sample** : Cigarettes for test taken at random from the laboratory sample and which are representative of each of the increments making up the laboratory sample.

**3.8 test portion** : A group of cigarettes prepared for a single determination and which is a random sample from the test sample.

**3.9 place of purchase** : The town, village or district within the area to be sampled, or that part of the area where the cigarettes are available.

Examples of boundaries are those of cantons, local government districts, electoral areas, postal code areas, or any boundaries according to the geographical context or others.

**3.10 sampling point** : The specific location (e.g. shop, specialist tobacco shop, vending machine, place in warehouse, place in factory, etc.) from which an increment is to be taken.

**3.11 factory** : The place of manufacture or its associated distribution depots, or the warehouse of an importer.

**3.12 carton** : A commercial package available within a factory containing enough packets to provide at least two increments; e.g. packets of 20 cigarettes are usually put into cartons of 200 cigarettes.

**3.13 satisfactory cigarettes** : Cigarettes of normal production quality with no holes or defects which could cause different results from those which would be obtained from cigarettes in good condition.

## 4 Procedure for sampling at one time

NOTE — When a sale unit does not consist of a packet of 20 cigarettes, the number of sale units sampled shall be adjusted to produce the required number of cigarettes.

Two alternative sampling procedures are described : in 4.1 a procedure for sampling at the point of sale, and in 4.2 a procedure for sampling at the premises of the manufacturer or importer.

### 4.1 Procedure for sampling at the point of sale

#### 4.1.1 Selection of the places of purchase

The required number of increments and the number of places of purchase to be used will depend on the purpose of the test and are given in clause A.2 of the annex.

#### 4.1.2 Selection of the sampling points

The increments obtained in each place of purchase shall originate from sampling points which are distributed over separate locations throughout the place of purchase.

The choice of sampling points should, whenever possible, reflect the pattern of retail distribution of cigarettes in that sampling place to be sampled. This is usually done by defining for each sampling scheme several kinds of sampling points (e.g. automatic vending machines, supermarkets, specialist tobacco shops).

Each kind of sampling point is sampled at random throughout the place of purchase, and in total the samples from each kind of sampling point shall make up a defined proportion of the whole sample (this is called a quota from each kind of sampling point).

Sampling shall only be carried out at another kind of sampling point after two unsuccessful attempts have been made at sampling points of the specified kind.

#### 4.1.3 Constitution of the gross sample

The gross sample is the aggregate of the increments. However, for reasons of convenience, it is often preferable to prepare the laboratory sample directly from the increment (3.3) or the sub-period sample (3.5).

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