INTERNATIONAL STANDARD

ISO 3550-2

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Cigarettes — Determination of loss of tobacco from the ends —

Part 2:
Method using a rotating cubic box (sismelatophore)

Cigarettes — Détermination de la perte de tabac par les extrémités —

Partie 2: Méthode utilisant une boîte rotative cubique (sismélatophore)

Reference number
ISO 3550-2:1997(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 3550-2 was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*, Subcommittee SC 1, *Physical and dimensional tests*.

ISO 3550 consists of the following parts, under the general title *Cigarettes — Determination of loss of tobacco from the ends*:

— *Part 1: Method using a rotating cylindrical cage*

— *Part 2: Method using a rotating cubic box (sismelatophore)*

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Introduction

The loss of tobacco from cigarette ends, which particularly affects short strands, is a nuisance for the industry as well as for the consumer.

From this standpoint, the greater a cigarette's resistance to loss from its ends, the higher its quality.

The measuring devices available are based on the rotation of a cigarette-containing device. This International Standard describes two particular types of devices. The first, described in ISO 3550-1, comprises a rotating cylindrical cage through which tobacco is allowed to fall into a weighing vessel; the second, described in this part of ISO 3550, uses a cubic box rotating about its main diagonal axis.

The first system principally permits determination of losses undergone by the cigarette during the manufacturing and packaging processes, and the second one losses undergone throughout the distribution network and in the smoker's pocket.

The two methods are not mutually exclusive and other acceptable methods exist which are based upon slightly different types of device.

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Cigarettes — Determination of loss of tobacco from the ends —

Part 2:
Method using a rotating cubic box (sismelatophore)

1 Scope

This part of ISO 3550 specifies a method for the determination of loss of tobacco from cigarette ends using a cubic rotative box (sismelatophore).

It applies mainly to the determination of the losses undergone throughout the distribution network and in the smoker's pocket.

NOTE — A method of determination of loss of tobacco from the ends using a rotating cylindrical cage is described in ISO 3550-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3550. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3550 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2971:—[1], *Cigarettes and filter rods — Determination of nominal diameter — Method using the laser beam measuring apparatus.*

ISO 3402:1991, *Tobacco and tobacco products — Atmosphere for conditioning and testing.*

ISO 6488:—[2], *Tobacco — Determination of water content — Karl Fischer method.*

ISO 8243:1991, *Cigarettes — Sampling.*

3 Principle

A test portion of a given number of cigarettes is subjected to a random series of impacts repeated in such a way as to bring about artificially a loss of tobacco strands at the ends.

These impacts are achieved by tumbling the portion in a cubic box revolving uniformly around an axis coincident with a principal diagonal.

The tobacco loss, expressed in parts per thousand (‰), is given by calculating the ratio of the loss of mass of cigarettes in a given time to the initial mass of the test portion.

As a first result of the test, the mass, m_L, of tobacco falling from the test portion is determined. From this mass, m_L, and the non-tobacco mass, m_2 (cigarette paper, filter, glue, etc.), the characteristics of the

[1] To be published. (Revision of ISO 2971:1987)
[2] To be published. (Revision of ISO 6488:1981)

cigarette (i.e. the loss rate of tobacco, the loss of tobacco per open end and per unit cross section of the open end) are determined.

4 Apparatus

4.1 Conditioning chamber, capable of controlling the enclosed atmosphere in accordance with the requirements of ISO 3402.

4.2 Cubic rotating box (sismelatophore) (see figure 1), consisting of:

a) a cubic box, made of poly(methyl methacrylate) or any other plastics material having equivalent properties, the inside edge of which measures 140 mm ± 5 mm, held by two trihedral supports in such a way that one of the principal diagonals is horizontal; one of the faces of the cubic box can be opened (groove or hinge);

b) one half-spindle, clamped to a timing micromotor device, which rotates the cube at 60 min^{-1} ± 2 min^{-1}. The other half-spindle supports a spring which holds the cube in position during rotation; this allows the cube to be freed for filling or emptying;

c) a time-switch for regulating the duration of operation of the micromotor.

Dimensions in millimetres

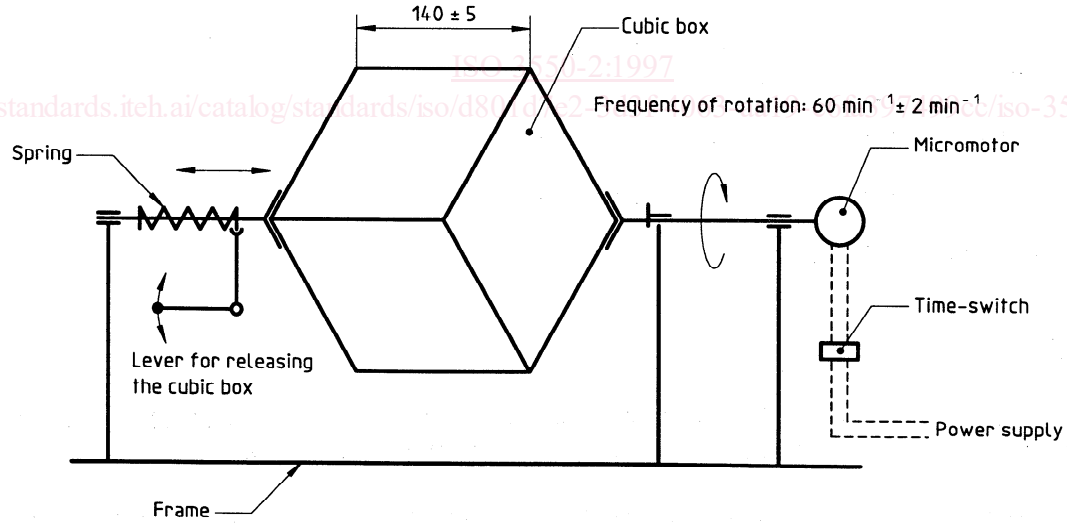

Figure 1 — Cubic rotating box (sismelatophore)