SLOVENSKI STANDARD
SIST ISO 3550:1995

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Cigarete - Določanje izgub tobaka na koncih cigaret

Cigarettes -- Determination of loss of tobacco from the ends

Cigarettes -- Détermination des pertes de tabac par les extrémités

Ta slovenski standard je istoveten z: **ISO 3550:1985**

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65.160	Tobak, tobačni izdelki in oprema	Tobacco, tobacco products and related equipment

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Cigarettes — Determination of loss of tobacco from the ends

Cigarettes — Détermination des pertes de tabac par les extrémités

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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.

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 3550 was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*.

ISO 3550 was first published in 1975. This second edition cancels and replaces the first edition, of which it constitutes a minor revision.

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Cigarettes — Determination of loss of tobacco from the ends

0 Introduction

The loss of tobacco from the ends of cigarettes, which particularly affects short strands, is an irritating phenomenon to which the consumer is very sensitive. Agitation of cigarettes favours this loss; it is in the smoker's pocket that this effect is most noticeable, more particularly when the packet has been opened. From this standpoint the greater a cigarette's resistance to this loss the higher its quality.

The vibrating box apparatus (sismelatophore) designed to determine, under reproducible conditions, the tendency of the ends of cigarettes to lose their contents, is described in 4.2.

1 Scope and field of application

This International Standard specifies a method for the determination of the loss of tobacco from the ends of cigarettes.

2 References

ISO 2971, *Tobacco and tobacco products — Cigarettes and filters — Determination of nominal diameter.*

ISO 3402, *Tobacco and tobacco products — Atmospheres for conditioning and testing.*

ISO 6488, *Tobacco — Determination of water content (Reference method).*

3 Principle

Subjection of a test portion of a given number of cigarettes 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 shaking the test 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 the cigarettes in a given time to the initial mass of the test portion. The loss per unit area, expressed in milligrams per square centimetre, is given by calculating the ratio of the loss of mass to the cross-sectional area of the cigarettes.

4 Apparatus

4.1 Conditioning enclosure, regulated in accordance with the requirements of ISO 3402.

4.2 Vibrating box (see the figure), consisting of

a) a cubic box of polymethylmethacrylate or any other plastics material having equivalent properties, the inside edge of which measures 140 ± 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 ± 2 min^{-1}. The other half-spindle supports a spring which holds the cube in position during rotation; it allows the cube to be freed for filling or emptying;

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

4.3 Analytical balance.

5 Sampling

Sampling of cigarettes for sale to the public will form the subject of a future International Standard.

6 Procedure

6.1 Conditioning of test sample

Place the test sample in the conditioning enclosure (4.1) and leave until constant mass is obtained.

6.2 Test portion

Take, as the test portion, 20 cigarettes from the conditioned test sample. Take at the same time a test portion for the determination of water content according to ISO 6488.

6.3 Determination

Weigh the test portion and transfer immediately to the vibrating box (4.2); then operate the latter for 2 min ± 6 s.[1)]

Weigh the test portion after shaking or weigh directly the mass of the debris collected from the appliance. Cut the paper lengthways with a sharp blade and separate the tobacco from the paper, adhesive and filter (in the case of filter cigarettes). Weigh the non-tobacco material and the tobacco.

6.4 Replication

Repeat the test five to ten times according to the accuracy desired.

7 Expression of results

7.1 Loss rate

The rate of loss, expressed in parts per thousand, of the tobacco from the ends of plain or filter cigarettes is given by the formula

$$1\,000 \left(\frac{m_0 - m_1}{m_0 - m_2} \right)$$

or

$$1\,000 \left(\frac{\Delta m}{m_0 - m_2} \right)$$

where

m_0 is the initial mass, in grams, of the test portion;

m_1 is the mass, in grams, of the test portion after the determination;

m_2 is the tare mass, in grams, of the cigarette paper, the filter, the glue, etc.;

Δm is the loss of mass, in grams, of the cigarettes during the test.

7.2 Loss per unit area

The loss per unit area, Φ, of the tobacco from the ends of the cigarettes is given by the equation

$$\Phi = \frac{\Delta m}{n\,S}$$

In practice, Φ is expressed in milligrams per square centimetre, which leads to the use of equations (1) and (2).

For filter cigarettes

$$\Phi = \frac{5\,000\,\Delta m}{S} \qquad \ldots (1)$$

For plain cigarettes

$$\Phi = \frac{2\,500\,\Delta m}{S} \qquad \ldots (2)$$

where

Δm is the loss of mass, in grams, of the cigarettes during the test;

S is the area of cross-section, in square millimetres, of the cigarette — if the cross-section of the cigarette is circular

$$S = \frac{\pi d^2}{4}$$

d being the nominal diameter, in millimetres, of the cigarette determined in accordance with ISO 2971;

n is the number of open ends of the cigarettes:

n = 20 in the case of filter cigarettes, and

n = 40 in the case of plain cigarettes.

8 Test report

The test report shall show the method used and the results obtained. It shall also mention any operating conditions not specified in this International Standard, or regarded as optional, as well as any circumstances which may have influenced the results, including the water content after the test of the cigarettes submitted to the test.

The conditioning and test atmospheres shall be given in the test report. If determined, the water content of the test sample shall also be given.

The test report shall give all information necessary for the complete identification of the sample and, in particular, whether the cigarettes have filters.

1) This duration was selected experimentally as giving good sensitivity in an acceptable time.

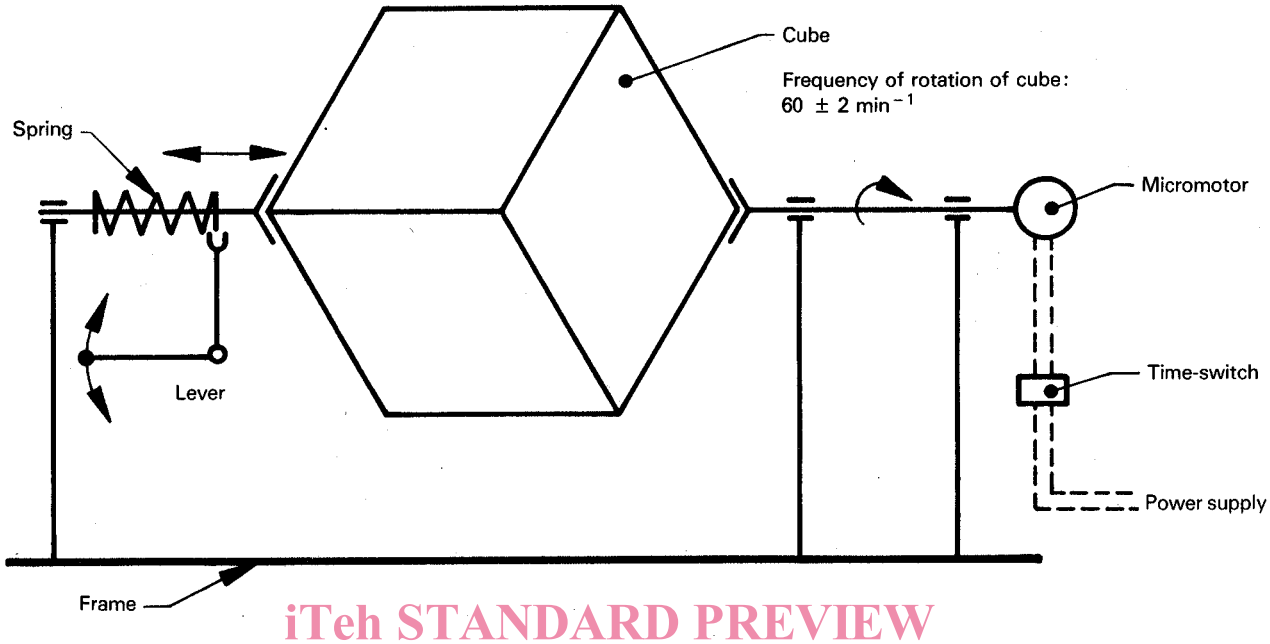

Figure — Vibrating box apparatus