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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

YC/T 37.4-1996

Replacing YC/T 37.4-1996

Test of filters physical characteristics. Part 4: Hardness

(English Translation)

Issued on: May 9, 2003 **Implemented on: July 1, 2003**

Issued by: State Tobacco Monopoly Administration

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Foreword

This part is the fourth part of the series of YC/T 37 "Determination of physical properties of filter rods". The series of standards consists of seven parts.

--- Part 1. Length photoelectric method;

--- Part 2. Circumferential photoelectric method;

--- Part 3. Drainage;

--- Part 4. Hardness;

--- Part 5. Moisture;

--- Part 6. Roundness;

--- Part 7. Appearance.

This part replaces YC/T 37.4-1996 "Determination of physical properties of filter rods - Part 4. Hardness".

The main changes in this section compared with YC/T 37.4-1996 are as follows.

---Complementary and complete technical requirements for test instruments;

--- The measurement method is changed from the three-point method to the one-point method, and the compression position is not limited.

This part is proposed by the National Tobacco Monopoly Bureau.

This part is under the jurisdiction of the National Tobacco Standardization Technical Committee (TC144).

This section drafted by. National Tobacco Quality Supervision and Inspection Center.

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1 Scope

This part of YC/T 37 specifies the method for determining the hardness of the filter rod.

This section applies to filter rods of various specifications.

2 Principle

In a certain period of time, the radial direction of the sample is subjected to a certain pressure, and the percentage of the diameter of the sample after being pressed and before being compressed is the hardness.

3 Instruments

3.1

The equipment required to determine the hardness should meet the following requirements.

--- A device capable of applying a radial point pressure to the sample;

---Indenter. It should be a circular plane of (12.00±0.01)mm, which can apply pre-pressure to the sample. The pre-pressure is (49±

1) mN, pressure rate (0.55 ± 0.05) mm/s, pressure load (2.94 ± 0.01) N, compression time (15 ± 1) s;

--- The amount of compression should be calculated after compressing (measuring) the initial position of the front indenter to the position of the indenter at 15 sec after the preload is applied.

Transfer amount

--- Specimen baffle. It should be fixed on the instrument so that the sample can not move when it is under pressure. In the test area, there should be at least 20.0mm x 20.0mm rectangular plane, so that the sample is evenly distributed under pressure;

--- Range (0 ~ 4) mm, resolution of 0.01mm, accuracy of 0.02mm.

3.2

Standard rod. (compression amount) accuracy 0.003mm.

4 Determination steps

4.1

Turn on the power of the instrument and warm it up to stabilize it.

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4.2
Calibrate the zero and full scale values of the instrument with a standard rod to match the displayed value of the instrument to the calibration value of the standard rod.

4.3
Place a sample of known circumference on the instrument sample baffle.

4.4
Pre-pressure should be applied to the sample before compressing the sample.

4.5
Drive the instrument to pressurize the device and start the timer at the same time.

4.6
(15±1)s, the pressure load is removed by the instrument, or the measurement result is printed directly by the instrument.

5.1 Calculation

The hardness of each filter rod is calculated according to formula (1).

H = D - D x 100% =

D x 100%

In the formula.

H---hardness;

?---the amount of compression of each filter rod, in millimeters (mm);

D---the diameter of the sample before compression, in millimeters (mm);

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