



**Cooperation Centre for Scientific Research
Relative to Tobacco**

CORESTA Guide N° 30

**Technical Guide
for CORESTA Ignition Propensity Monitor
Test Piece Production and Evaluation
Requirements**

April 2024

Smoke Analysis Sub-Group



CORESTA TECHNICAL GUIDE N° 30

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Technical Guide for CORESTA Ignition Propensity Monitor Test Piece Production and Evaluation Requirements

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1. Introduction

The CORESTA Smoke Analysis Sub-Group (SA) launched a project to develop a CORESTA Technical Guide for CORESTA Ignition Propensity Monitor Test Piece Production and Evaluation Requirements in April 2023. A group of experts was formed and a first meeting took place on June 14, 2023.

2. Monitor Test Piece Specification

It is recommended that the following specifications be met for CORESTA Ignition Propensity Monitor Test Piece production:

Tobacco blend and cut rag

Type of tobacco	Flue-cured lamina, no stems, no semi-finished tobaccos (such as reconstituted tobacco, expanded tobacco)
Additives	No humectants
Cut width	~ 0,9 mm

Monitor test piece dimensions

Test piece length	~ 84 mm (king size)
Test piece diameter	~ 7,8 mm
Test piece pressure drop closed	~ 88 mmWG
Rod length	~ 60 mm
Tobacco weight	~ 765 mg
Tobacco moisture	~ 12,0 %

Monitor test piece non-tobacco materials

Filter rod diameter	~ 7,8 mm
Tow specification	2.5 Y32HK or similar
Filter plug pressure drop	~ 75 - 80 mmWG
Plasticizer	~ 7 % triacetin
Plug wrap	Preferably nonporous
Filter length	~ 21 mm
Tipping	Distinguishable from commercial products (i.e. grey tipping) with CM-IP logo, online or pre-perforated
Tipping width	~ 25 mm
Test piece paper	Wood paper 26 g/m ² 80 CU and with 1,4 % of citrate
Band diffusion capacity	~ 0,08 cm/s
Paper width	~ 26 mm
Band width	~ 6 mm
Band space	~ 18 mm

The product design must ensure that the self-extinguishing rate is sufficiently high at 85 to 90 %.

3. General Production Requirements for Monitor Test Piece

- The monitor test piece shall be produced from one production batch.
- The number of monitor test pieces produced shall be sufficient to cover the needs of a period of at least 2 years. It is recommended that the production amount be set according to the maximum storage capacity of the suppliers.
- For reasons of homogeneity, the cut tobacco used shall be taken from one well-mixed batch. If possible, it is advisable to use a single grade tobacco with no further addition of materials, such as stems, humectants or flavors, to avoid unnecessary heterogeneity of the blend.
- The non-tobacco materials used, such as tipping, cigarette and plug wrap paper, shall be taken from one production batch and strict quality-control measures shall be applied during the production of the filters.
- Specifications for the length and diameter of the monitor test piece and for its filter length, tipping length and filter material shall be set before the production. The specifications must encompass not only the target values but also the maximum variability.
- The production tolerances for tobacco mass and circumference of the monitor test piece shall be controlled as precisely as possible. It will be necessary to increase the quality-control measures and to decrease the production machine speed to obtain the required constancy in physical parameters and self-extinguishing rate of the monitor test pieces. It is important that the variability is markedly lower than for normal commercial cigarette production.

4. Additional Notes Concerning Production Requirements

- As the monitor test piece is frequently used as an indicator for stable conditioning, the tobacco mass and total mass of the product must be controlled as tightly as possible.
- To facilitate the control of uniform rod filling and high-end stability it may be advantageous to increase the target tobacco weight by up to 30 mg compared to the recommended tobacco weight in the table "Monitor test piece dimensions".
- Weight control is critical in the production of a reliable monitor test piece. Excessive weight variation contributes to unacceptable variation in ignition propensity assessments.
- It is recommended that the weight of individual monitor test pieces is controlled to a standard deviation of less than ± 15 mg.

- The standard deviation of weight for individual monitor test pieces is estimated as follows:
 - **Sampling**
More than 20 monitor test pieces are sampled at the cigarette making machine at least 40 times with the same interval throughout the production batch. [Refer to ISO 8243 4.1.1 Note]. This will generate a minimum of 800 individual measurements.
 - **Measurement**
The 20 monitor test pieces from each sampling are weighed individually without conditioning directly after sampling during the ongoing production. Intermediate standard deviations are used to monitor the quality of the ongoing production.
 - **Evaluation**
Finally, the overall standard deviation is calculated by all values of individual (≥ 800) monitor test piece weights.

5. Packaging

It is essential that the monitor test piece be clearly distinguishable from commercial cigarettes. The products must be packed in hard boxes of 20 test pieces that shall carry a text similar to the text given below and as illustrated in the attached Figures 1-3:

**CORESTA approved
Ignition Propensity
MONITOR No. X**

**FOR NON-CONSUMER LABORATORY TESTING PURPOSES ONLY
NON-COMMERCIAL PRODUCT
DATE OF PRODUCTION: XXXXX**

**CORESTA Ignition Propensity Monitor No. X
Quantity: XXXX test pieces
Producer: XXXXXXXX
Date of production: XXXXXXXX
FOR NON-CONSUMER LABORATORY TESTING PURPOSES ONLY**

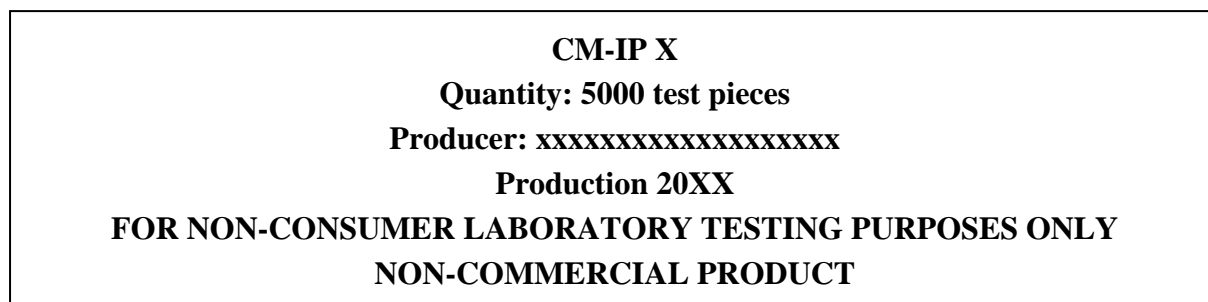
Figure 1: Monitor Test Piece with CM Logo and Hard Box (*example*)



Figure 2: CM X Outer Carton and Flat (example)



Figure 3: Label for Shipping Carton (*example*)



6. Evaluation of CORESTA Monitor Test Piece

- The monitor test pieces in a production batch must show consistent values of full length burning and self-extinguishment respectively according to ISO 12863 - *Standard test method for assessing the ignition propensity of cigarettes*. The consistency shall be assessed by means of a comparative study of sufficient size using samples representing the entire production run.
- This comparative study is coordinated by the CORESTA Smoke Analysis Sub-Group and results are statistically evaluated to ensure acceptably low variation in self-extinguishment or full length burning prior to the release of the monitor test piece for sale.
- The packaged monitor test pieces shall be stored at a temperature below +4 °C until they are to be used.