

**RTC LABORATORY, INSTRUMENTS AND TESTING
PROCEDURES
CHAPTER 5.3
ANNEX A: RETEST PROCEDURE**

**Project CFC/ICAC/33
Commercial Standardization of
Instrument Testing of Cotton
with particular consideration of Africa**



This project is co-funded by the European Union
and the Common Fund for Commodities



REGIONAL TECHNICAL CENTRE FOR EAST/SOUTHERN AFRICA
IN COLLABORATION WITH TANZANIA BUREAU OF STANDARDS
AND TANZANIA COTTON BOARD



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Document Type: Procedure	Prepared by: RTC Staff Signed by: Gervas Kaisi Signature:	Approved by: RTC Management Signed by: D.H. Mwakangale Signature:	Effective Date: 2010-07-01

1. Purpose:

In order to verify the results reproducibility from the tested samples by laboratories, it is intended that a certain percentage of the samples tested by the laboratories should be submitted to the RTC for retest. The RTC will do at least 2 tests/results on each sample, based on the standardized testing procedure by the CSITC Task Force, to check, whether given reproducibility limits are obtained.

- a) The purpose of the procedure is to ensure that
 - i) The percentage of samples to be sent for retesting is stated (See Annex A, clause A.1),
 - ii) Sample is properly prepared for re-test purposes,
 - iii) Sample size is defined (See Annex A, clause A.2),
 - iv) Proper packaging materials are used (See Annex A, clause A.2),
 - v) Transport logistics are arranged (See Annex A, clause A.3)
- b) That samples are properly sent by regional laboratories to RTC's
 - i) Baring Lab Name/shortcut; Lot number; bale ID; testing date,
 - ii) Communication to the RTC laboratory is made regarding sample dispatch including date sent and means of transport used.
- c) That samples are properly received and registered by the RTC laboratory and feedback is sent back to respective regional laboratory (See Annex A, clause A.3)
- d) That samples are properly conditioned for 24 hours at ASTM standard conditions of $21 \pm 1^\circ\text{C}$ and relative humidity $65 \pm 2\%$ and being tested in time (see Annex A, clause A.4)
- e) That results are properly evaluated and sent to regional labs for improvement of their laboratories, if any (See Annex A, clause A.5)
- e)f) That the samples are properly stored (See Annex A, clause A.6)

2. Scope:

The procedure covers re-test samples from Laboratories in the region of RTC East including other African laboratories which are not directly served by the RTC.

3. Responsibilities and Authorities

It is the responsibility of the RTC experts to implement and maintain this procedure.

4. Reference:

- 1) **F01/RTE/04/001: Re-test sample register book for RTC East**



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ANNEX A

DETAILED DESCRIPTION

A.1) Number of samples for retest

- Labs with 1 to 10 samples per day; 1 retest sample to be picked per day
- Labs with 11 to 40 samples per day; 10% retest sample to be picked per day
- Labs with 41 to 100 samples per day; 5% retest sample to be picked per day
- Labs with 101 to 200 samples per day; 2.5% retest sample to be picked per day
- Labs with 201 to 500 samples per day; 2% retest sample to be picked per day
- Labs with more than 500 samples per day; 1% retest sample to be picked per day

NOTE:

- For number of samples resulting into decimal places please round to the nearest complete number
- Choose samples with equally spaced intervals, starting with sample no. 2 and then as follows:
 - Labs with 1 to 10 samples per day; 1 retest sample to be picked per day: → sample no. 2
 - Labs with 11 to 40 samples per day; 10% retest sample to be picked per day. → sample no. 2, 12, 22 etc.
 - Labs with 41 to 100 samples per day; 5% retest sample to be picked per day: → sample no. 2, 22, 42, 62 etc.
 - Labs with 101 to 200 samples per day; 2.5% retest sample to be picked per day: → sample no 2, 42, 82, 102 etc.
 - Labs with 201 to 500 samples per day; 2% retest sample to be picked per day: → sample no. 2, 52, 102, 152 etc.
 - Labs with more than 500 samples per day; 1% retest sample to be picked per day: → sample no. 2, 102, 202, 302 etc.

A.2) Sample size/packing

- Participating laboratory shall send to RTC laboratory samples with weight of at least 150g per sample.
- If the typical laboratory sample size is smaller than 150g, then a special agreement between the participating laboratory and the RTC has to be found.
- For samples with more than 300g, the participating laboratories may decide to divide the sample up and send only a sub-sample.
- Proper packaging materials should be kraft/wrapping paper or PP bags.



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A.3) Transport logistics

- **Means**
 - Samples: Bus transport, post office, EMS or courier agents.
 - Test results from laboratories: by e-mail as data file (.dat, .csv, or similar) exported from testing instrument, as excel file; or as printout/hardcopy together with samples
 - Re-test report: by e-mail as .pdf file
- **Frequency**
 - Samples: accumulated for not more than two weeks before sending
 - Lab test results: with the samples
 - Re-test report:
 - Major deviations will be reported on short notice.
 - Report for each sample delivery.
 - Summary report every month.

Note 1: How the retest samples will be delivered to the RTC

- The samples should be dispatched using a cheap means of transport available to the RTCs. The laboratories decide on the kind of transport basing on the input of the RTC.
- The transport shall not require more than one week.
- In sum, sample collection and delivery may not take more than 3 weeks.

Note 2: How to verify the results from the participating laboratories

- The labs have to submit their results for lots from which samples were sent to RTC for re-test to compare with the RTC re-test results. For confidentiality of names of the sample owners' results, only the lot numbers, parameter results and sample numbers tested will be shown in the results list.
- At the RTC, these results will be treated confidentially and separated from the samples to avoid testing biasness of the RTC laboratory operators.



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A.4) How to test

- Samples have to be properly conditioned for 24 hours at ASTM standard conditions of $21 \pm 1^\circ\text{C}$ and relative humidity $65 \pm 2\%$ or until equilibrium is reached and proven.
- Samples have to be tested at maximum one week after reception.
- Samples have to be tested at least 2 times. Testing has to be done on two different days.

A.5) How the evaluations of the results will be done

- Evaluation will be done using an Excel form specifically developed for this purpose.
- The Reproducibility limits will be fixed on the USDA Reproducibility limits;
 - Micronaire: ± 0.1 mic
 - Strength: ± 1.5 g/tex
 - Length UHML: ± 0.02 inches = 0.508 mm
 - Length Uniformity: ± 1.0 %
 - Colour Rd: ± 1.0
 - Colour +b: ± 0.5
- Each laboratory receives a detailed report every month
 - Tables of the test results.
 - Share of reproducibility of the results (how many differences between lab and RTC results are within the given limits);
 - Distribution of differences graphical display;

A.6) Sample storage

- Either RTC stores at least as long as the labs requests;
 - At least 6 weeks but not more than 6 months
- Or, on request RTC sends samples back on the expenses of the laboratory;
- Specific solutions may be fixed with each lab.
- A subset of the samples will be sent to FIBRE for a re-evaluation and stored there.

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A.7) Cost for the re-test

- Testing is free for the duration of the project CFC/ICAC/33 (until November 2011)
- Transport costs have to be paid by the labs
- After the end of the Project a determined cost will be charged for sample retests
- After the end of the Project consideration will be made to reduce the number of samples for retest in order to minimize cost for laboratories

A.8) Participation to the RTC retest

Labs participation to the RTC re-test program is recommended, but not mandatory. However, we encourage every lab within the region to participate as participation provides important information about the laboratory's result reproducibility.

The participation may be published as "Retested by RTC East on Reproducibility".



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ANNEX B

