



# Supplementary Criteria for Accreditation **Sampling Wool for Testing and Certification**

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# Supplementary Criteria for Accreditation

## Wool Testing Laboratory Accreditation Programme

# Sampling Wool for Testing and Certification

## AS LAB C8.1

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# Contents

1	Introduction .....	6
2	Definitions .....	6
3	Background.....	6
4	Classes of Test .....	7
5	Sampling and Weighing by Laboratory Staff .....	7
5.1	Scope of Accreditation/Key Technical Personnel.....	7
5.2	Documentation .....	7
5.3	Training .....	7
5.4	Independence.....	7
5.5	Internal Audits .....	7
5.6	Sampling Records.....	8
5.7	Equipment Records.....	8
6	Sampling and Weighing Under Direct Full Time Supervision by Laboratory Staff .....	8
6.1	Scope of Accreditation/ Key Technical Personnel.....	8
6.2	Documentation .....	8
6.3	Training .....	8
6.4	Independence.....	9
6.5	Internal Audits .....	9
6.6	Sampling Records.....	9
6.7	Equipment Records.....	9
7	Sampling and Weighing by Accredited Representatives .....	9
7.1	Criteria for Accreditation – Sampling for the Laboratory by Accredited Representatives .....	9
7.2	Agreement.....	9
7.3	Independence/Accountability .....	10
7.4	Documentation .....	10
7.5	Personnel and Training .....	10
7.6	Sample Handling.....	10
7.7	Equipment.....	10
7.8	Sampling Data.....	11
7.9	Audits of Accredited Representatives.....	11
8	References.....	11
	Appendix 1: Equipment Calibration Intervals – sampling sites.....	13

## 1 Introduction

The Supplementary Criteria provide additional or more specific detail about the particular requirements in a given area of testing. This document describes the requirements that apply to the sampling of wool that is to be tested and certified on the basis of that sampling, and subsequent testing, against International Wool Textile Organisation (IWTO) approved methods and regulations.

The Specific Criteria for Wool Testing itself are given in AS LAB C8.

## 2 Definitions

### Core Sample

A representative sample of raw wool obtained from each bale in the lot by coring techniques. (When issuing an IWTO Certificate, sampling must comply with the relevant IWTO Regulations).

### Grab Sample

The greasy wool drawn from a bale by a single operation of a grab machine. The procedure must be in accordance with IWTO 38 (length and strength) or NZS 8719 or AS/NZS 4844.1 [Length After Carding (LAC)]

### Laboratory

For the purposes of this schedule, the terms laboratory and test house may be considered equivalent. (Note that a laboratory must be licensed by IWTO to issue IWTO certificates).

### Key Technical Personnel (KTP)

A staff member of a laboratory approved by senior laboratory management to sign test certificates or reports covered by the laboratory's scope of accreditation. An approved KTP must have sufficient knowledge and experience of the methodology to take full responsibility for test results (or, in this case, sample integrity).

### Accredited Representative

An independent representative of the laboratory who carries out the weighing and sampling functions on the laboratory's behalf and under an appropriate level of supervision. An accredited representative may be an individual sampler/weigher or a corporate body employing the nominated samplers/weighers. In either case, if the accredited representative is a principal (or an employee of a principal) in the sales transaction, then the supervision must be full time. (See the IWTO Core Test Regulations and the IWTO Condition Testing Regulations for the full definition).

## 3 Background

The National Council of New Zealand Wool Interests (NCNWI) and International Accreditation New Zealand (IANZ) have jointly developed criteria for the accreditation of wool testing laboratories. IANZ has accredited laboratories in New Zealand against these criteria for a range of standard test methods.

Proper sampling is critical to the quality of subsequent tests, and samples for testing and certification must represent the bulk of the material. Wool to be certified against IWTO specifications must be sampled and weighed strictly in accordance with the IWTO Core Test Regulations, the Condition Testing Regulations, or other authorised sampling procedures for grab sampling. These regulations require weighing and sampling of wool to be carried out:

- (a) by laboratory staff, or;
- (b) under their continuous full time supervision while weighing and sampling is carried out, or;
- (c) by being sub-contracted to Accredited Representatives.

This criteria publication describes the IANZ requirements for accreditation for the sampling and weighing of wool for certification in New Zealand. The principle of the requirements is that weighing and sampling staff, sampling procedures, and also the checking and calibration of associated equipment, together with all relevant records must be under the control of the testing laboratory and/or its management system; whether sampling is carried out by its own staff or by directly supervised or sub-contract staff.

The schedule has been divided into three sets of criteria covering: weighing and sampling by laboratory staff; weighing and sampling under full time continuous supervision; and weighing and sampling by accredited representatives.

## 4 Classes of Test

The following classes for core and grab sampling are covered by this document:

### 8.05 Sampling

- (a) Manual grab sampling
- (b) Machine grab sampling
- (c) Manual core sampling
- (d) Machine core sampling
- (e) Sub-sampling staples from grab samples
- (f) Hand sampling
  - (i) Hand sampling scoured wool
  - (ii) Hand sampling tops.

## 5 Sampling and Weighing by Laboratory Staff

### 5.1 Scope of Accreditation/Key Technical Personnel

Laboratories must hold accreditation for all relevant sampling methods

*NB: Accreditation by a national accreditation body is a necessary condition for licensing by IWTO for issuing IWTO test certificates.*

Weighing and sampling staff are expected to have the knowledge and experience required to achieve Key Technical Personnel status for sampling and weighing.

### 5.2 Documentation

Procedures for sampling, weighing, record keeping, data files and the inspection and calibration of associated equipment must be documented and implemented in accordance with the requirements of ISO/IEC 17025.

### 5.3 Training

Qualified and experienced personnel must train laboratory sampling and weighing staff using a documented training programme. Records of qualifications, general experience, specific on the job training, courses and knowledge of this schedule must be retained by the laboratory and be available for review by IANZ. Retraining must be carried out at least annually and include: the significance of coring schedules, maintenance and checking of equipment, required sample weights, sample quality (contamination) and the requirements of this schedule.

### 5.4 Independence

Test house staff members are normally considered to be independent of the sales transaction. However, where staff members are contracted from firms dealing in wool at remote locations, the laboratory will need to ensure there is no conflict of interest on the part of such staff.

### 5.5 Internal Audits

Sampling and weighing procedures must be audited as part of the annual auditing of laboratory procedures for all branches carrying out sampling and weighing. The annual retraining of test house samplers also forms part of this process. Audits must be scheduled in advance and carried out against a systematic plan. Audit reports and records of corrective action must be reviewed by the laboratory's management team and be available for review by IANZ.

## 5.6 Sampling Records

Records of sampling and weighing information must accompany each sample. The laboratory must retain these for later review by IANZ if required. Sampling records must be retained for a minimum of one year or until the wool is further processed. Sampling and weighing worksheets must include the following information:

- (a) Location of sampling
- (b) Name/signature of sampler/weigher
- (c) Date of sampling
- (d) Identification of the test lot and total number of bales
- (e) Any laboratory seal/identification applied to bales and samples
- (f) Identification of each and all bales in a sampling lot
- (g) Individual gross bale weights
- (h) Tares of individual bales and total tare
- (i) Sampling method – manual or machine
- (j) Number of cores per bale
- (k) Type of sample – core, grab, Length After Carding (LAC) grab.

The laboratory is responsible for the appropriate packaging, storage, security and transport of test specimens after sampling and prior to testing.

*NB: Where samples cannot be delivered to the laboratory within the relevant time interval (e.g. 4 hours scoured, 24 hours greasy) they must be double bagged. The sample bag must be constructed such that the sample does not show a change in mass of more than  $\pm 0.05$  % during storage before weighing. New sample bags should be used.*

Certification of wool is related directly to its physical condition (moisture content, contamination, grease levels, etc.) at the time of the sampling.

## 5.7 Equipment Records

Records of sampling and weighing equipment checks and calibration must be held in the laboratory's equipment calibration and maintenance system where it directly samples and weighs wool (where this happens infrequently records may be maintained at the sampling site if that site is also an accredited representative). The calibration reminder system must schedule the routine equipment checks of Appendix 1, including maintenance and replacement of core cutters, sampling equipment checks and weighing scale calibration.

# 6 Sampling and Weighing Under Direct Full Time Supervision by Laboratory Staff

## 6.1 Scope of Accreditation/ Key Technical Personnel

This clause is as for 5.1 except only the supervising staff members are expected to have the knowledge and experience of Key Technical Personnel.

## 6.2 Documentation

The requirements are the same as for 5.2.

## 6.3 Training

Sampling staff must be trained to the laboratory's satisfaction by qualified and experienced personnel using a documented training programme.



Normally, supervision will take place at sites where test house employees may otherwise be responsible for sampling or weighing (e.g. Wool Merchant Stores). Alternatively, supervision might take place at Brokers' Stores or Scours that usually operate as accredited representatives and have sample supplier agreements with the laboratory.

The training requirements of 5.3 apply to the former case and the requirements of 7.5 apply in the latter.

## **6.4 Independence**

Supervising laboratory staff, whether permanent, casual, part-time or contract employees, must not have any interest in the sales transaction relating to the wool being sampled (see the Core Test Regulations, 1.4.1).

## **6.5 Internal Audits**

Supervision of sampling and weighing procedures must be audited as part of the annual auditing of laboratory procedures for all branches carrying out sampling and weighing. The annual retraining of test house samplers also forms part of this process. If supervision takes place at sites that normally act as accredited representatives, the normal six monthly audits by the branch will suffice unless the volume of work being supervised is large. Audits must be scheduled in advance and carried out against a systematic plan. Audit reports and records of corrective action must be reviewed by the laboratory's management team and be available for review by IANZ.

## **6.6 Sampling Records**

The requirements are identical to those for 5.6.

## **6.7 Equipment Records**

If supervision takes place at Merchants' Stores then the requirements of 5.7 apply. Where occasional supervision takes place at Brokers' Stores or Scours, then the requirements of section 7 apply. The laboratory may rely on its six-monthly audit visits and related records, along with those held by the sample supplier. In either case, the routine equipment checks of Appendix 1, including maintenance and replacement of core cutters, sampling equipment checks and weighing scale calibration, must be scheduled regularly by the responsible party.

# **7 Sampling and Weighing by Accredited Representatives**

## **7.1 Criteria for Accreditation – Sampling for the Laboratory by Accredited Representatives**

Individual accredited representatives, or nominated individual samplers where the accredited representative is a corporate body, may act as contracted samplers and weighers under the arrangements for periodic audit and training described below.

Accreditation of sampling and weighing carried out by accredited representatives will be administered as an extension to the existing scope of accreditation of an already accredited laboratory.

## **7.2 Agreement**

Each accredited representative acting as a weigher and sampler of wool on behalf of the independent laboratory must be accountable to that laboratory for compliance with the technical requirements of this schedule and must sign a formal contract or agreement to that effect. The agreement must also demonstrate, to the laboratory's satisfaction, compliance with the arrangements specified in the IWTO Core and Condition Testing Regulations and any other relevant IWTO procedures or regulations.

This agreement or contract, where it relates to supervision, independence and accountability, must be available for review by IANZ. An annex to the agreement normally lists the individual samplers and weighers designated by the sample supplier as test house approved samplers and weighers. That list must be reviewed at least annually.

### 7.3 Independence/Accountability

An accredited representative must not be a principal (or an employee of a principal) in the sales transaction (or be involved in processing in the case of scoured wool) unless supervision by the laboratory is continuous and full time.

### 7.4 Documentation

As for 5.2 and 6.2, the accredited laboratory's management system must encompass the policy, responsibilities and procedures described in this Supplementary Criteria Schedule.

In addition, an up to date sampling manual, that includes the requirements of the relevant IWTO regulations and appropriate sampling schedules, must be provided to each accredited representative/sample supplier.

Designated weighers and samplers must have a copy of a relevant up to date sampling manual, provided by the laboratory, readily available at all times. Coring schedules and equipment maintenance schedules will also be provided by the laboratory.

### 7.5 Personnel and Training

Sampling staff must be trained to the laboratory's satisfaction by qualified and experienced personnel using a documented training programme. Normally, at least the designated Sampling Officer or QC Officer will be trained by laboratory staff. Alternatively, all sampling and weighing staff listed on the schedule to the agreement between the laboratory and the accredited representative may be trained by the test house. In the former case, it is the responsible party of the accredited representative that is required to keep records of training of samplers and weighers.

Information on the prior experience and/or training of the samplers and weighers must be provided as well as a record of any periodic on-site checks made by the laboratory. Training records must be retained and must include details of on the job training received, general experience, qualifications, knowledge of this Schedule, etc. Annual retraining in weighing and sampling, the significance of the coring schedule, maintenance and checking of equipment, desired sample weights, and sample quality (contamination) must be carried out.

Laboratory supervising staff will need to ensure that the required equipment and facilities are available and that samplers and weighers are not subject to any conflict of priorities when sampling is to be carried out.

Laboratories must maintain a register of nominated weighing and sampling personnel. This will normally be the annex to the agreement specified in 7.2.

The register and all records relating to on-site sampling personnel shall be confidential to the laboratory but shall be made available for scrutiny during the course of any IANZ assessment.

### 7.6 Sample Handling

The laboratory is responsible for ensuring that appropriate packaging, storage, security and transport of test specimens takes place after sampling and prior to testing.

*NB: Where samples cannot be delivered to the laboratory within the relevant time interval (e.g. 4 hours scoured, 24 hours greasy), they must be double bagged. The sample bag must be constructed such that the sample does not show a change in mass of more than  $\pm 0.05$  % during storage before weighing. New sample bags should be used.*

It is the responsibility of Key Technical Personnel to ensure that the requirements of the standard sampling methods are met and of the on-site weighers and samplers to maintain their work places and any sampling and weighing equipment in acceptable condition and to follow the laboratory's sampling manual.

### 7.7 Equipment

The relevant standard sampling methods define any equipment to be used for sampling and weighing. Appendix 1 lists equipment maintenance and calibration requirements.

The laboratory must be satisfied that the proper equipment is available for use, that proper storage facilities are available and that regular checking is carried out to demonstrate continued compliance with the

requirements of the standard test methods. Such checks must be documented and be available for scrutiny during an IANZ assessment.

## 7.8 Sampling Data

Sample data must be reported to the laboratory on sample data sheets or sampling reports provided by the laboratory and containing all the following requirements:

- (a) Location of sampling
- (b) Name of nominated sampler/weigher (and accredited representative if a corporate body)
- (c) Date of sampling
- (d) Identification of the test lot and total number of bales
- (e) Any laboratory seal/identification applied to bales and samples
- (f) Identification of each and all bales in a sampling lot
- (g) Individual gross bale weights
- (h) Tares of individual bales and total tare
- (i) Sampling method – manual or machine
- (j) Number of cores per bale
- (k) Type of sample – core, grab, LAC grab
- (l) Identification of type of sampling and weighing equipment.

They must be signed by the weigher and sampler to certify that the work has been in accordance with the relevant standards. Sample forms may be designed to suit the requirements of a laboratory or a particular job but they must provide for all the data specified in the relevant methods.

Samples which are delivered to the laboratory for subsequent testing, their manner of delivery, their state on arrival and the information accompanying them will need to support the requirement that the on-site operations have been carried out in accordance with the relevant IWTO regulations. Records of sample compliance with specified requirements on receipt by the laboratory must be maintained and be available for subsequent audit by IANZ. These records must include sample weights on receipt, level of apparent contamination, confirmation that the information required above has been provided and reference to corrective action where samples are not accepted for test.

## 7.9 Audits of Accredited Representatives

An audit by the accredited laboratory must be carried out at least every six months on each accredited representative operating within this programme, to ensure that the requirements of this Schedule are being maintained. Records of these audits must be maintained and be reviewed at management reviews and must be available for scrutiny by IANZ. The audit must involve witnessing of all or part of the sampling and weighing for which the nominated samplers have approval. Audits must be scheduled in advance, be carried out against a systematic plan and be formally reported. Any corrective actions identified and recorded during audits shall be cleared within the agreed time. If necessary, further visits shall be made.

All documents, procedures and forms used should be part of the management system documentation. Records confirming the effective implementation of the system must be retained for ten years.

## 8 References

1. IWTO Core Test Regulations
2. AS/NZS 1363.1:1996, *Wool-Grab Sampling-Greasy Wool, Part 1: Method for grab sampling greasy wool from bales*.
3. IWTO 38, *Method of grab sampling greasy wool from bales*.
4. NZS 8719, *Method for the measurement of fibre length after carding of scoured wool*.

5. *AS/NZS 4844.1, Wool-measurement of fibre properties, Part1: Measurement of the fibre length after carding of scoured or carbonised wool.*

## Appendix 1: Equipment Calibration Intervals – sampling sites

Records of all calibrations and checks of equipment must be retained for review at IANZ assessments or laboratory audits. Special requirements apply to sampling for length and strength and length after carding.

Type of equipment	Maximum period between successive calibrations	Calibration Procedures and Equipment Requirements
Bale Weighing Devices	Yearly  * Weekly (or when used)	Calibration by IANZ accredited laboratory or equivalent. Accuracy of certification must be at least 0.1 % of full scale.  Accuracy of scales must be checked over the range of common use of the dial or digital range using nominal value masses. Check at least one point near the top of the range as well as zero. A check in mid-range is also desirable.
Core Sampling Machines and tubes	* On day of use <i>(* Where necessary or scheduled.)</i>	The pneumatic lines carrying air for the ejection of the core sample must be fitted with a moisture trap, which must be checked and attended to when necessary.  Machinery in contact with wool must be free of oil.  Ejection of pack cores must be effective.  The depth of penetration of coring tube(s) must be checked to ensure penetration of at least 93 % of the bale length for automatic coring machines.  Replace cutters with sharpened ones.
Manual Coring Equipment	* On day of use <i>(* Where necessary or scheduled.)</i>	The depth of penetration of coring tube(s) must be checked to ensure penetration of at least 47 % and not > 50 %, for manual coring tubes.  Replace cutters with sharpened ones.
Grab Sampling Machines	* On day of use	The following should be checked and corrected where necessary for compliance:  (a) Gap between closed grab jaws (b) Minimum distance between tip of fixed grab jaw and lower side of bale (c) Machine can sample upper and lower levels (d) Cott plate is in place  See also AS/NZS 1363.1:1996.