

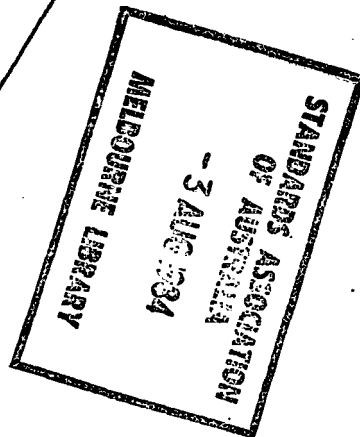
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Australian Standard 1363—1984

WOOL—GRAB SAMPLING OF GREASY WOOL



AS/NZS 1363.1:1996
Method for grab sampling
greasy wool from bales
(IWTO-38-91)
(In Professional Package 54A)
16pp EE
Sets out a method of obtaining
representative samples of
greasy wool from conventional
bales. It is identical with and
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Australian Council of Wool Buyers
Australian Wool Corporation
Australian Wool Testing Authority Limited
CSIRO, Division of Textile Physics
Department of Primary Industry
National Council of Wool Selling Brokers of Australia
University of New South Wales
Wool Council of Australia
Wool Textile Manufacturers of Australia

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PREFACE

This edition of this standard was prepared by the Association's Committee on Testing of Wool to supersede AS 1363—1976. Its aim is to standardize practices for the sampling of greasy wool by means of a mechanical grab sampling machine. The sampling procedure details the operation necessary to obtain a representative sample from a sale lot and ensures that every portion of the wool has an equal chance of being selected.

This edition takes cognizance of the practices which have developed in the wool trade since the standard was first published in 1973. This edition describes the use of a particular type of grab sampling machine, but alternative types of machines may be used, provided that data are available to demonstrate that samples so obtained have a sampling precision at least equivalent to that stated. In order to obtain this precision it is required that the greasy wool in the lot have similar characteristics throughout.

The standard is one of a series of standards for sampling and testing of wool. Other standards in the series are as follows:

- AS 1133 Method for the Determination of Fibre Diameter of Raw Wool*
- AS 1134 Method for the Determination of Wool Base and Vegetable Matter Base in Raw Wool
- AS 1362 Method for Calculation of Combined Test Certificates for Yield and Fineness of Greasy Wool in Consignments*
- AS 1401 Method for the Sonic Fineness Testing of Raw Wool*
- AS 1809 The Preservation of the Integrity of Raw Wool Samples for Display
- AS 1980 Wool—Core Sampling of Raw Wool in Bales
- AS 2104 Method for Matching and Building Sale Lots of Greasy Wool in Bales by Objective Measurement
- AS 2274 Wool—Requirements for the Issue of a Test Certificate*
- AS 2720 Wool—Determination of Mean Staple Length—Method Using the CSIRO Staple Length Meter
- AS 2721 Wool—Subsampling of Staples from Grab Samples
- AS 2722 Wool—Determination of Mean Staple Strength—Method Using the CSIRO Staple Strength Meter†
- AS AAAA Wool—Method for the Measurement of the Clean Colour of Wool†

*In course of revision.

†In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard
for
WOOL—GRAB SAMPLING OF GREASY WOOL**

FOREWORD

This standard relates to a method of obtaining a sample of greasy wool which may be put to several uses; the major use is to provide a 'display sample' for subjective appraisal.

The sample is obtained by random selection of portions of the bulk, each portion having an equal chance of being selected. This makes it possible to define the 'precision' of the sample mean so that confidence limits can be allocated to it.

It is important to realize, however, that the calculation of confidence limits is based on the assumption that the characteristic, whether subjectively or objectively estimated, is evenly spread throughout the bulk. The occurrence of small pockets of material with a markedly disparate value for the characteristic will cause difficulties in obtaining a sufficiently representative sample.

METHOD

1 SCOPE. This standard sets out a method for obtaining a representative sample of greasy wool by grab sampling either during or after the baling operation.

The samples may be used—

- (a) as a display sample for sale by sample;
- (b) for the measurement of characteristics such as staple length and staple strength; or
- (c) for the appraisal of other characteristics.

The standard sets out a method for sampling wool using the grab machine detailed in Appendix A. Other methods and grab machines may be used, provided that data are available to demonstrate that samples are produced which have a sampling precision in accordance with Appendix C.

2 APPLICATION. The method described herein is suitable for use on sale lots which have been prepared from greasy wools having similar characteristics distributed throughout the bulk. Lots prepared to industry-agreed clip preparation standards would be expected to comply with this requirement.

In this case, the sample will have an adequate level of precision for the purposes of appraisal or measurement of the average value of each characteristic. The sample may not be suitable for estimating the variability of that characteristic if it occurs in clumps or pockets within the bulk.

3 PRINCIPLE. Grab samples are taken in such a way that every portion of wool in the bulk has an equal chance of being selected and each unit of the bulk is equally represented in the sample. Individual grab samples should be uniform in mass and any variation in mass should only reflect the variation in mass of the units being sampled. Since an equal number of grab samples is taken from each unit, the total mass of grab samples taken from each unit should also be similarly uniform.

4 DEFINITIONS. For the purpose of this standard, the following definitions apply:

4.1 Conventional Australian bale—a bale of wool of approximately 0.75 m × 0.75 m × 1.25 m packed to a density of about 142 kg/m³ to 284 kg/m³, i.e. of mass 102 kg to 204 kg.

4.2 Grab sample—the greasy wool drawn by a single operation of a grab machine.

4.3 Greasy wool—unprocessed wool from sheep or wool shorn from sheepskins.

4.4 Sale lot—a number of bales of similar mass containing greasy wool prepared for sale according to accepted trade practices.

4.5 Sample—the combined grab samples representative of the wool in the sale lot.

4.6 Unit—a conventional Australian bale, a high density bale or a fixed amount of wool, used in preparing a bale.

5 APPARATUS.

5.1 Grab machine. A mechanical device capable of operating a set of jaws. The jaws shall perform the following essential functions:

- (a) Penetrate to any point within the wool in such a way as to avoid contamination of the wool by pack material.
- (b) Draw an unbiased grab sample of wool of suitable size.
- (c) Withdraw the entire grab sample clear without damage to the pack.
- (d) Release the grab sample.

NOTE: Details of a machine suitable for conventional Australian bales are given in Appendix A.

5.2 Pack slitter. For sampling wool packaged in jute or synthetic packs, a pack slitter (see Note 1) is required, consisting of—

- (a) for jute packs—a sharp knife; or
- (b) for synthetic packs—a heated metal rod or bar capable of forming a slit by melting the fabric and at the same time fusing the ends of the yarn to prevent fraying (see Notes 2 and 3). A suitable hand-held tool is described in Appendix D.

NOTES:

1. It is essential that pack slitting is done in such a way as to avoid contamination of the wool in the bale with pack material.
2. It is stressed that in order to prevent contamination of the wool with synthetic pack material, the pack fibre on each side of the slit must be melted and the ends of the yarn fused together when making the opening.
3. Woolpacks should comply with the current standards on the Australian Wool Corporation. Experience has shown that woolpacks which do not comply with that standard are a major source of contamination of the wool fibre whether grab sampled or not. Where substandard synthetic woolpacks are used, additional care is required to ensure that the ends of the yarn are properly fused.

6 SAMPLING.

6.1 Requirements. Whether the wool is sampled from bales or during preparation of the bales, the sampling procedure shall comply with the following requirements:

- (a) Each unit in the sale lot shall be sampled.

NOTE: During the automatic sampling or unblended combinations of farm bales into a single large bale, it is the intention that each such farm bale should be regarded as a unit, and that each unit is sampled.

- (b) The same number of grab samples shall be taken from every unit in the sale lot.
- (c) The minimum number of grab samples taken from a sale lot of conventional Australian bales shall be 20.

NOTE: The precision of appraisal of a sample consisting of at least 20 grab samples is given in Appendix C.

- (d) All grab samples taken from the sale lot shall be of similar size.
- (e) Not more than two grab samples shall be taken from the one slit.