Australian/New Zealand Standard™

# Wool—Fleece testing and measurement

# Method 4: Measurement of mean fibre diameter and determination of fibre diameter distribution using the SIROLAN-LASERSCAN measuring system

## PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TX/12, Wool to supersede AS/NZS 4492.4(Int):1997. It is based on the method of testing core samples by the SIROLAN-LASERSCAN measuring system in IWTO 12, *Measurement of the mean and distribution of fire diameter using the SIROLAN-LASERSCAN fibre diameter analyser*.

The measurements should be regarded as relative, not absolute values, and they should only be used for within-flock comparisons.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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## METHOD

**1 SCOPE** This Standard sets out a procedure for obtaining the mean and distribution of fibre diameter in a sample of fleece wool. Included are requirements for drawing subsamples and preparing test specimens.

**2 OBJECTIVE** The objective of this Standard is to provide the wool industry with a method of determining mean fibre diameter and diameter distribution by the SIROLAN-LASERSCAN measuring system, for the purpose of ranking sheep or, in the case of mean fibre diameter, for classing fleeces according to diameter.

**3 PRINCIPLE** Snippets are cut from samples of fleece wool, using a minicorer and cleaned, where required. The snippets are dispersed as a dilute suspension in a mixture of isopropanol (propan-2-ol) and water (8% by volume). The suspension of snippets is transported through a measuring cell which is positioned in a beam of laser light. The reduction in intensity of the laser beam as the individual snippets pass through the beam of light, approximately 500 µm in diameter, is sensed by a detector and transformed, using a calibration look-up table, into a diameter in micrometres. A computer is used to collect and summarize the individual measurements to give statistics such as mean and standard deviation of fibre diameter for the specimen.