



## THE LENGTH AFTER CARDING TEST

### Background

Approximately 80% of all exported wool from New Zealand is in scoured form. Length is one of the most critical quality parameter in wool processing, however traditional estimates of staple length (SL) are difficult to assess once the wool has been washed and the staples become entangled and less clearly defined. Consequently the Length after Carding (LAC) test was developed to provide a standardised measure of the fibre length of scoured crossbred wool after semi-worsted processing.

### The Test Method

The test procedure has been developed into a New Zealand Standard (NZS 8719). Throughout the entire scouring process three LAC test samples are randomly drawn using specially-designed sampling equipment. One of the three samples is randomly selected as the test sample.



Fig 1: A twisted hank

The sample is carded and gilled to remove the vegetable matter and align the fibres. Sliver samples are twisted into hanks in preparation for measurement. A series of fibre draws are prepared from the slivers and read on an Almeter.

The LAC test provides for a certified measurement of Barbe length for the scoured delivery. Additional data on Hauteur length and length distribution are provided. An estimate of the card waste (percentage) is also available.

### LAC Test Guidelines

Some key rules-of-thumb apply in LAC testing:

- There is a close relationship between the SL (greasy wool) and Barbe length, for sound fleece wools up to 100mm
- Oddments will generally produce a shorter Barbe length than fleece wools
- Tender wool and more variable-length wools will reduce the SL/Barbe ratio (i.e. the Barbe length will be shorter than the staple length)
- The amount of fibre breakage during carding increases as staple length increases
- Finer (30-34 micron) wools tend to produce a shorter Barbe for the same staple length than coarser wools
- Irrespective of staple length and strength it is difficult to obtain Barbe lengths over 130mm, due to increased fibre breakage with longer wool



Fig 2: A sample ready for measurement

### The Commercial Application of Length after Carding

Many processing problems or product faults originate from inappropriate specification of raw material. Scoured wool exports of New Zealand crossbred wool commonly have specification requirements for fibre diameter, colour and vegetable matter. Similarly, LAC is a critical parameter due to its important role in processing efficiency and product performance. NZWTA Ltd assists industry sectors looking to improve production/quality and has extensive experience in LAC testing.

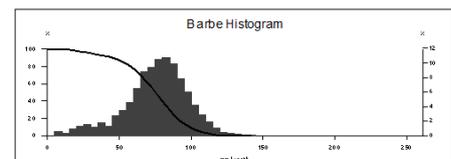


Fig 3: Example Barbe Distribution

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