



## Sheep CRC Wool Industry Case Studies

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# Handle and Next to Skin Comfort Evaluation of Lightweight Knitted Wool Fabric



## INDUSTRY CASE STUDY

### Different Wool Fibre Diameter

#### Background:

The Sheep CRC in Australia has developed tools to predict next to skin comfort and to quantify the handle attributes of lightweight, knitted, wool fabrics.

The Comfort Meter gives a value that relates to the perception of prickle in next to skin garments.

The Handle Meter gives a value to seven identified attributes of fabric handle as well as a value for overall handle.

#### Application:

If I change the wool fibre diameter while keeping remaining yarn and fabric specifications the same what will be the effect on fabric handle and comfort?

#### Material:

Three single jersey fabrics were measured on the Comfort meter and the Handle meter. All three fabrics were knitted by one knitter to the same specification (24gg, 165gsm). The yarn was 1/40 Nm, from the same spinner, and nominally made from 16.5 $\mu$ m, 18.5 $\mu$ m and 20.5 $\mu$ m wool, respectively. Fabrics were given the same finishing routine.

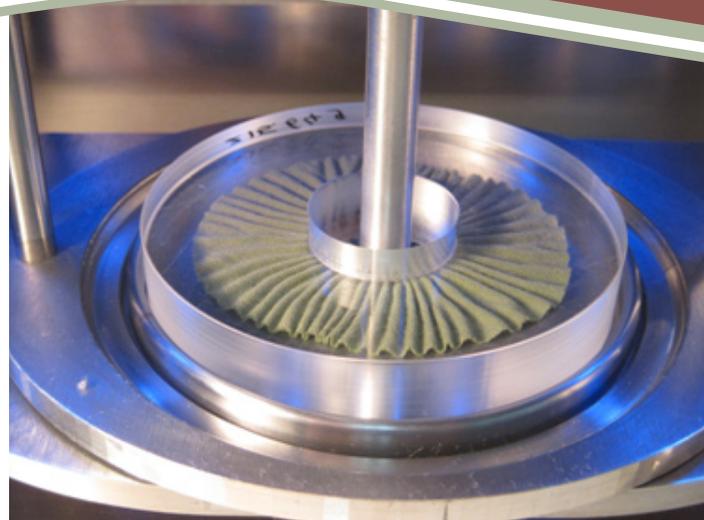


Image showing the pattern of fabric deformation during a Handlemeter test

#### Results:

FABRIC	COMFORT METER	SOFTNESS	SMOOTHNESS	WARM FEEL
16.5 $\mu$ m	263	7.8	7.3	5.1
18.5 $\mu$ m	347	7.6	7.1	5.2
20.5 $\mu$ m	529	6.8	6.6	5.4

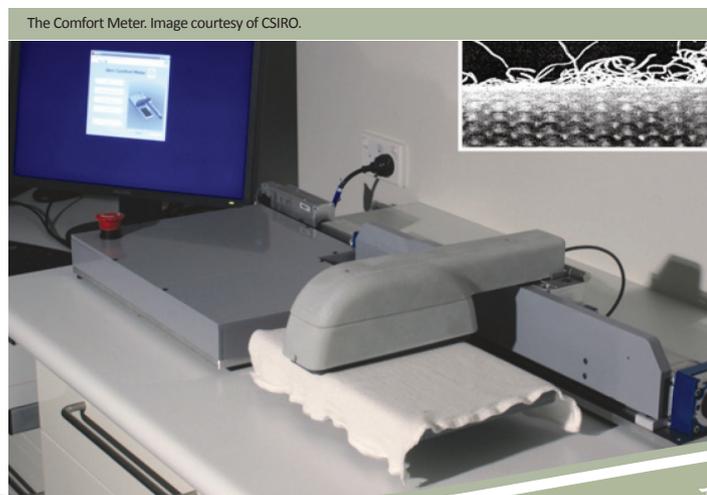
**Comfort Meter value:** The lower the value the better the next to skin comfort.

**Handle Meter value:** The higher the value the greater the sensation.

#### Outcome:

In this example the measurement of the comfort and handle showed that there were subtle differences in fabric handle amongst the fabrics made from wool of different fibre diameter. The handle testing showed that the fabric from the finest wool was softer and smoother than the fabrics made from the coarser wool. If this is what is required for the product then the benefits have been measured and can be costed and monitored in future production. Important aspects of the quality of the product have been measured and can be monitored in future production. Using the Comfort and Handle meters is the only way to objectively evaluate fabric for comfort and handle.

The Sheep CRC for Sheep Industry Innovation is a collaboration established and supported under the Australian Governments Cooperative Research centres Program. It includes Australia's sheep industry bodies AWI and MLA along with Australia's premier research and education institutions.



*Transforming wool, meat and the sheep that produce them*