

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



INDUSTRY CASE STUDY

Change Yarn Twist

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 comfort 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 my yarn twist will there be a major effect on fabric handle and comfort?

Material:

Two single jersey fabrics were measured on the Comfort meter and the Handle meter. Both fabrics were knitted on the same machine from a 1/40 Nm yarn made from the same 16.3µm wool top. The yarns were spun to twist levels of 440 & 600 tpm. Both fabrics were given the same finishing routine.

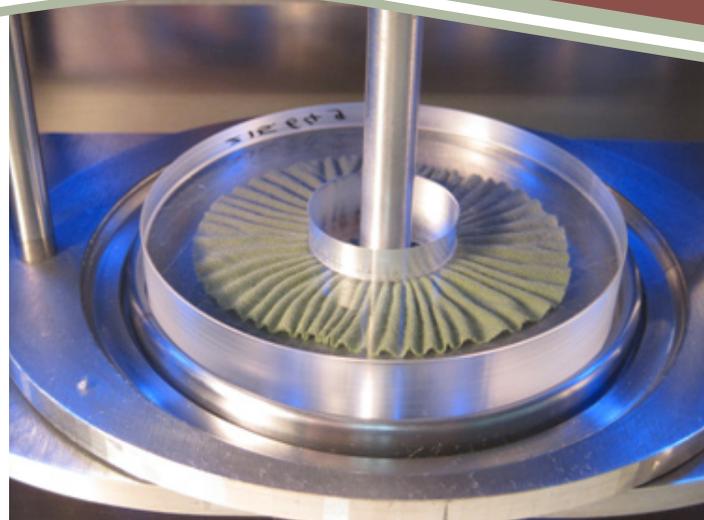


Image showing the pattern of fabric deformation during a Handlemeter test

Results:

FABRIC	COMFORT METER	SOFTNESS	SMOOTHNESS	WARM FEEL	Tightness
Low twist	154	7.5	6.9	4.8	5.1
High twist	192	5.9	6.2	5.3	5.8

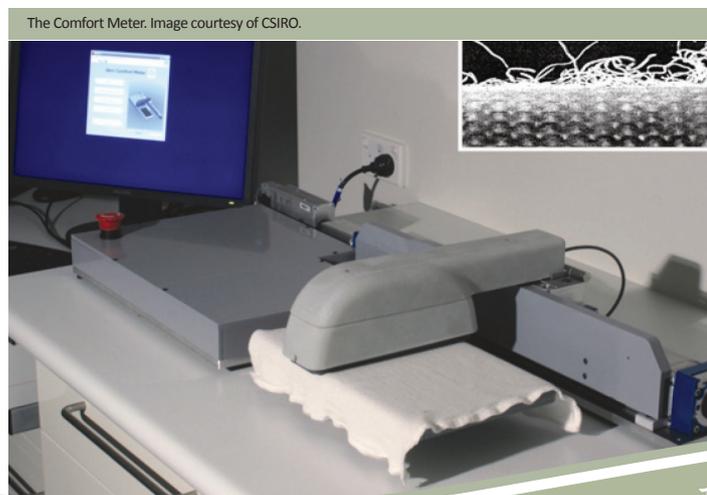
Comfort Meter value: The lower the value the better the next to skin comfort.

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

Outcome:

In this example the measurement of the comfort and handle showed that the change of yarn twist resulted in no change in comfort but did result in a significant change in fabric handle. The lower twist yarn produced a fabric with a higher rating for fabric softness and smoothness and a cooler feel. If this is what is required for the product then the benefits 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