

Relaxation Shrinkage Treatment for Knitwear

針織定型系統

Knitted fabric requires relaxation to restore its expected properties and performance. This project developed a low pressure relaxation (LPR) process other than conventional washing and tumble drying cycle (WTD). The developed technology achieves water evaporation by lowering air pressure. Water expands in volume during evaporation. The force field created by the water vapour expansion of a garment could be effected at its fibres and yarns. Agitation of the garment will therefore take place.

針織布料需經鬆弛後才可回復其理想的特性和狀態。有別於傳統循環洗水和烘乾方式，這項研究開發出嶄新的低壓鬆弛織物整理方法，利用氣壓下降而使水份蒸發，當織物水份蒸發時，其體積亦會膨脹，形成一股能量，當這股能量滲入到紗線和纖維結構時，便達致織物鬆弛的效果。



Application 應用

The new relaxation process is suitable for open width knitted fabric. With appropriate mountings, knitted sweaters can be processed.

這個嶄新的鬆弛過程適合應用於針織布料，只要配合適當的設備，便可進行毛衫處理。

Industry Benefits 業界效益

The process is potentially beneficial to sweater production. A WTD process usually comes before the final pressing in the sweater production line to correct dimensions and improve hand properties. Comparing to WTD, it is estimated that the new LPR process uses 19 times less electricity and 40 times less water as well as achieving 120 times faster on processing. Besides, the LPR offers a cleaner fabric appearance, higher pilling test grade and brighter colours especially for darker shades such as black and navy blue.

這項鬆弛加工整理技術可改善毛衫處理，在進行最後一次壓燙前，通常都要經過洗水和烘乾的工序，以增加衣物形狀的穩定性和改善手感。與洗水烘乾的鬆弛技術比較，新的低壓鬆弛技術可節省19倍的用電量和40倍的用水，處理時間亦可加快120倍。此外，經低壓鬆弛處理的布料表面會較為清潔，對起毛球的影響較小，亦可更好地保留衣物原來的顏色，尤其黑或海軍藍等深色衣物。

||| Technological Breakthrough 技術突破 |||

The WTD process relaxes knitted fabric by mechanical agitation while the LPR one relaxes knitted fabric by micro-agitation originated from expansion of water during phase change. The latter can better preserve the fabric properties.

傳統的洗水和烘乾工序是透過機械攪拌而鬆弛織物，低壓鬆弛則是透過織物在不同階段轉變時水份蒸發、膨脹而引起輕微攪動所致，令織物特性可以保持得更好。

||| Licensing Details 獲取專利 |||

A non-exclusive licence includes the right of making further R&D as well as sale of the system based on the filed patent.

非獨家專利授權包括根據專利內容進一步開發及銷售系統。

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