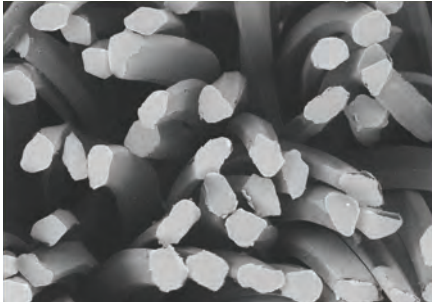
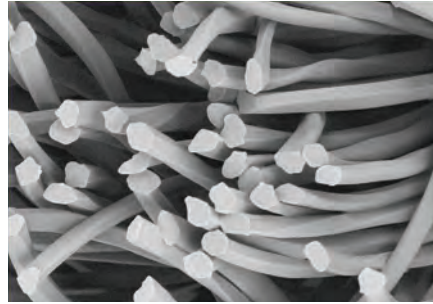


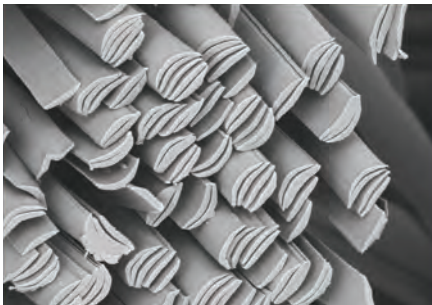
**Figure 1.** Avra cross sections compared to conventional polyester fibers used in performance apparel.



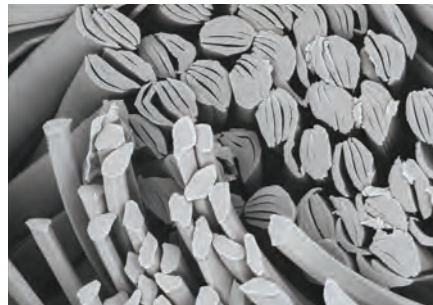
1/70/72 polyester fiber



1/70/136 polyester fiber



100% Avra (84 total denier/220 microfilaments)



Avra/polyester 1/70/136 fiber

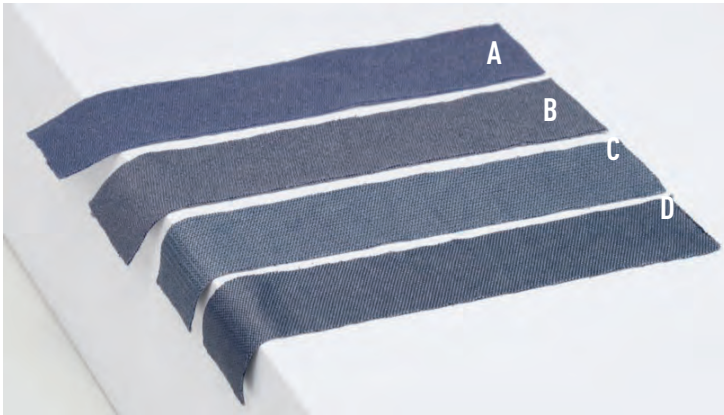
## FABRIC DRAPE VIA STIFFNESS MEASUREMENT

For a designer, nothing demonstrates softness better than having a fabric sample in their hands. Nothing. However, analytical methods have been developed which do allow for more objective comparisons of tactile fabric characteristics like drape, handle, and feel. One of these, ASTM D1388 *Standard Test Method for Stiffness of Fabrics*\* is generally considered to be indicative of fabric drape which in turn often corresponds to how stiff or “boardy” a material might feel when it is worn—i.e., how comfortable the wearer finds it to be.

Figure 2 depicts a very simple visual comparison of the drape/flexibility of a series of interlock knit fabrics of similar weight that are constructed from different polyester fibers. It is evident that those fabrics comprised of Avra bend much more readily than do the alternative materials—with the result, not surprisingly, being a much more comfortable, next-to-skin feel. In addition to this qualitative assessment, the apparent rigidity—or lack thereof—of these particular fabrics can actually be quantified using method D1388 (Figure 3). These data are very interesting in that the fabrics which are representative of those currently utilized in performance base layer applications are up to twice as stiff as the 100% Avra-enabled fabric, even the blend of Avra with another synthetic fiber demonstrates measurably reduced stiffness. This, in turn, would be expected to yield meaningfully improved comfort.

\*ASTM Standard D1388 (2014). Standard Test Method for Stiffness of Fabrics. West Conshohocken, PA: American Society of Testing and Materials International.

**Figure 2.** Linear drape of fabrics made during a controlled study involving interlock knitted fabrics having similar construction and basis weight.



**A.** 100% 1/70/72 polyester control fabric (0.97 dpf). **B.** 1/70/136 polyester microfiber control fabric (0.51 dpf). **C.** Avra/microfiber PET (or polyester) blend fabric. **D.** 100% Avra-based fabric.

**Figure 3.** Flexural rigidity of fabrics made during a controlled study involving interlock knitted fabrics having similar construction and basis weight. Relatively lower values indicate fabrics having less perceived stiffness, which is typically preferred for base layer apparel fabrics.

