

TECHNICAL TEXTILES – PART XVIII

REF: TT/ MAR 2022/ WK 3

SportTech or Sports Textile

Features of sports textiles

Some of the important features of sports textiles are:

- Must have the ability to fast drying and cooling properties
- Good heat transportation property
- Must have anti-static and anti-microbial properties
- Ability to provide protection from ultraviolet rays.
- Good air and water permeability.
- Durable and lightweight.
- Stretchable
- Easy to wear, easy handling



Special fibers used – Besides regular natural and synthetic fibers like cotton, silk, polyester, polyamide, polypropylene, acrylic, nylon, etc.; modified fibers and high performance fibers are also used in sports textile.

Some of the specially modified fibers used in sports textile are:

- **Nylon hollow filament yarn** -. These yarns are bi-component filament yarn with soluble polyester copolymer as the core portion. On this, alkali weight loss treatment is given to dissolve the soluble polyester and a large hollow portion is created. The hollow portion of filament gives good water absorbency and heat retention property.

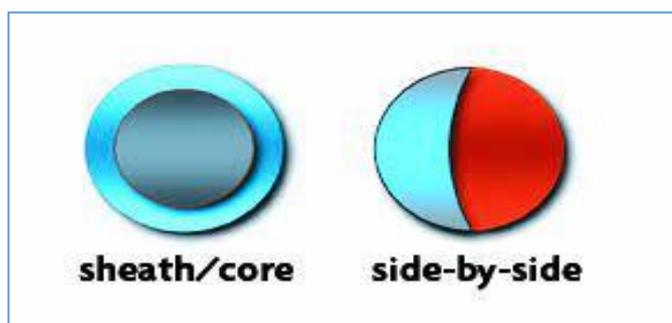


Fig 1.1 Cross-section of bi-component fiber

Ref: bt-fiber.com

BI-COMPONENT FIBER
A fiber which has two different types of continuous filament components.
The two components are of different physical and chemical properties.



- **4-Channel polyester fiber** – A four-channel polyester fiber is manufactured for better wicking properties and to increase the rate of drying.
- **Modified spandex fiber** – Spandex fibers are long-chain polymer composed of segmented polyurethane. These fibers give stretch and recovery property to the fabric when used along with regular fibers. A specially designed polyether-type spandex is manufactured by dry spinning method and is being used along with soft nylon-66 yarn to exhibit soft handle and excellent stretch. It is mainly used in swimwear.
- **Modified polyester microfiber** – Fabric made from re-engineered polyester microfiber with unique high-density weave structure are used in sports textile. These fabrics impart durable water repellency, superior breathability and wind resistance.
- **Nylon microfiber** - Nylon microfibers with many micro-loops on the surface are light weight and have good moisture permeability. The fabrics are used in mountaineering wear and other active sportswear.
- **High-performance fabric** - Multilayered structure, high performance fabrics are designed to quickly absorb perspiration and transport it up to the outer layer of fabric very rapidly using the principle of capillary action. It is composed of coarser denier yarn on the inside surface and fine denier hydrophobic polyester yarn in a mesh construction on the outer surface to accelerate quick evaporation of sweat.

References:

1. <https://www.technicaltextile.net/>
2. <http://www.technotex.gov.in/>
3. <https://textilelearner.net/>
4. <https://textilevaluechain.in>

.....To be continued.....

UNSCRAMBLE THE JUMBLE WORDS
ALENTFIM
NANELCH
OMEDIDIF
PLEPRICIN

Last week`s Answers: 1) ABSORBING 2) INSULATING 3) BACKING 4) SLEEPING

Wishing you a great week ahead!

Technical Tuesdays is a knowledge sharing initiative by Resil Chemicals Private Limited
arc@resil.com | www.resil.com.