

TECHNICAL TEXTILES – PART I

REF: TT/ NOV 2021/ WK 3

Introduction

Technical textiles are manufactured and used for their functionality in non-aesthetic areas. These textiles are engineered products to have improved filtration, flexibility, lightness, durability, resistance, and strength properties depending on their purpose.

Technical textiles are used individually or as a part of another product. Technical textiles are used individually to satisfy specific functions such as fire retardant fabric for uniforms of firemen/firewomen. As a component or part of another product, they are used to enhance the strength, performance or other functional properties of that product. Unlike regular textiles used for clothing or home furnishing, technical textiles are used based on their specific physical and functional properties and mostly by other user industries.

They are manufactured using natural as well as man-made fibers. The end-use applications of these products are spread across multiple non-conventional textile industries such as healthcare, construction, automobile, aerospace, sports, defence, agriculture, industrial safety, personal protection etc.

Depending on the product characteristics, functional requirements and end-use applications the technical textiles are grouped in 12 segments.

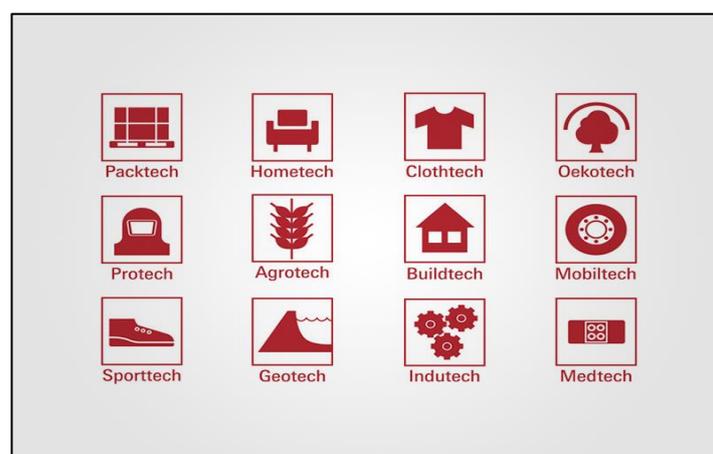


Fig 1.1 Different segments of Technical Textile

Ref: zimmer-klagenfurt.com



Segments of Technical Textile

- a. **PackTech** – These textiles include packing material used for packing various goods for industrial, agricultural, consumer and other purposes. It ranges from polymer-based bags to jute-based sacks used for different types of goods.
- b. **HomeTech** - Textiles used in interior decoration, furniture, fireproofing, floor and wall coverings etc. comes under this category.
- c. **ClothTech** – It is a segment which includes all textile components used in clothes and footwear.
- d. **OekoTech** - Environmental protection, floor sealing, erosion protection, air cleaning, prevention of water pollution, water cleaning, waste treatment/recycling, depositing area construction, product extraction, domestic water sewerage plants come under this category.
- e. **ProTech** - Protech is a segment of textile products and related material used in the manufacture of various protective clothing for personnel working in hazardous environment, such as fire fighter clothing, bullet proof jackets etc. All these things are obtained by usage of technical textiles with high performance fibers.
- f. **AgroTech** - They are used for crop protection, fertilization, etc. The essential properties required are strength, elongation, stiffness, and bio-degradation, resistance to sunlight and resistance to toxic environment. All these properties help with the growth and harvesting of crops and other foodstuffs.
- g. **BuildTech** - Textiles used in construction, concrete reinforcement, interior construction, insulations, proofing materials, air conditioning, noise prevention, visual protection, protection against the sun, building safety falls under this category.
- h. **MobilTech**- These textiles are used in the automobiles and aircraft industry. Carbon composites are mostly used in the manufacture of aero plane parts while carbon fiber is used for making higher end tyres.
- i. **SportTech**- These textiles are used in the sports industry. Examples are – Parachute fabric, sports net, sports shoe components, artificial turf etc.
- j. **GeoTech**- These are used in reinforcement of embankments or in constructional work. The fabrics in geo textiles are permeable fabrics and are used with soils having ability to separate, filter, protect or drain. The application areas include civil engineering, earth and road construction, dam engineering, soil sealing and in drainage systems.
- k. **InduTech**- Textiles used directly for industrial processes or incorporated into industrial products are called InduTech Technical textiles. Textiles used for chemical and electrical applications and textiles related to mechanical engineering, filtration, plasma screens, conveying equipment, sound-proofing elements etc are part of this segment.



- I. **MedTech** - These are commonly used in bandages and sutures. Sutures and wound dressings use fibers like silk and other synthetic fibers. Hollow synthetic fibers are used with nano or very small particles and are used for the delivery of drugs to any specific part of the body to prevent over dosage. Cotton, silk polyester, polyamide are also used in medical applications.

References:

1. <https://www.investindia.gov.in/>
2. <http://texmin.nic.in/>
3. <http://www.ittaindia.org/>
4. <https://www.technicaltextile.net/>

UNSCRAMBLE THE JUMBLE WORDS
UNFMATUACDER
OISEN
HTRAE
ODASEG

Last week`s Answers: 1) ELECTROCOAGULATION 2) OZONATION 3) COMMON 4) FUNGI

Wishing you a great week ahead!

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