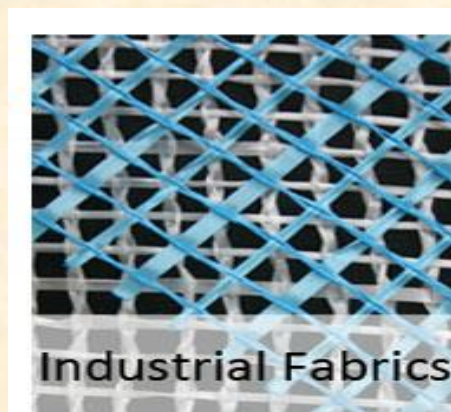


## **TECHNICAL TEXTILES**

**DR. IBRAHIM .G.,E.**

Textiles are the largest items of application next only to engineering goods, textiles have found wider acceptance in industry, house hold, aerospace and apparel field.. etc.

Today industrial textile has an old tradition, in the 20 th century when man-made fibers became available, the range of industrial textiles was rapidly widened by textiles before, These are currently used to produce fabric reinforced constructions, it is only in the last few decades that industrial textiles have become a commonly considered special group of textiles products, where industrial fabric of the textile field has grown more rapidly than house hold textile and apparel approximately 10 percent a year and makes up about 20 percent of the market share of textile products , and structure components as agriculture and forestry materials to protect natural resources and the living environment in transportation and storage in civil and railway engineering in the manufacture of sports leisure goods ... etc



## **CLASSIFICATION OF INDUSTRIAL TEXTILES**

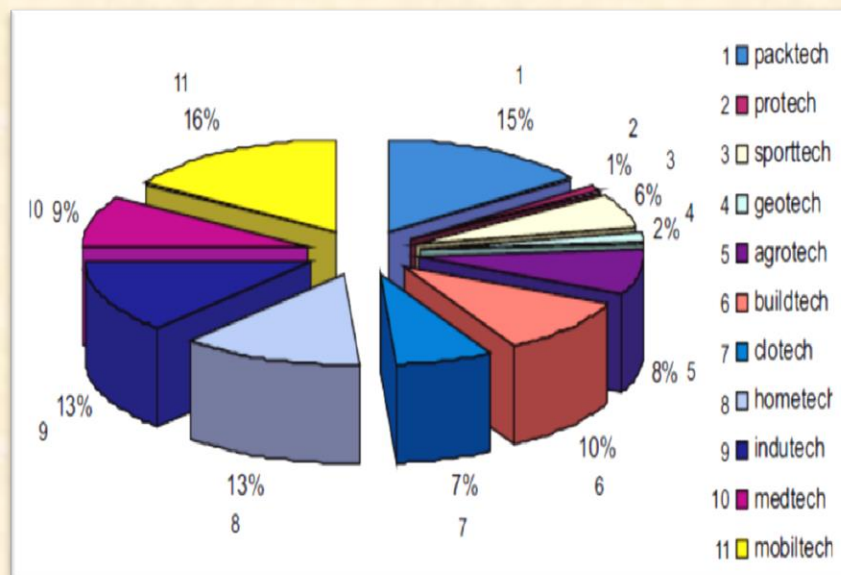
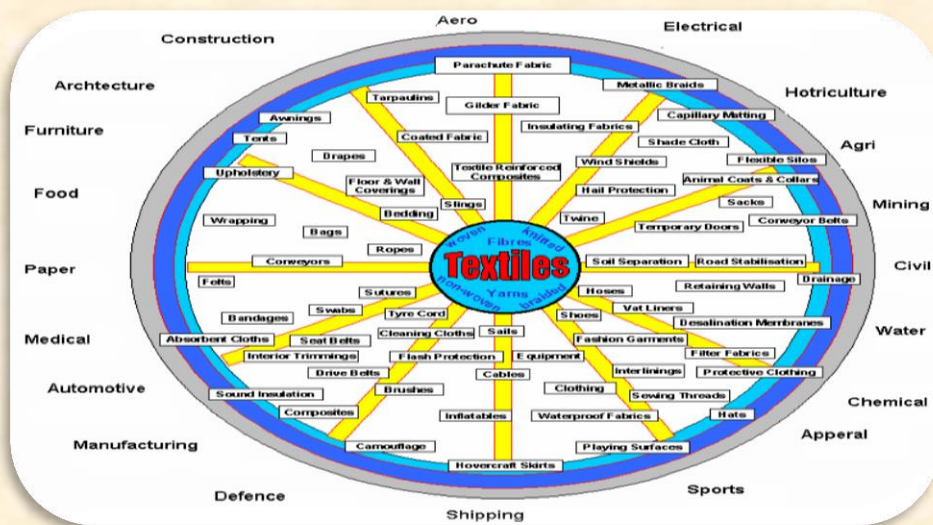
Classification of industrial textiles is a challenging task, classification of industrial textiles can be done in several ways according to the raw material processed, the manufacturing system and production technique, the basis of main industrial textiles groups. Or the end use (geotextiles, medical textiles, paper machine and clothing...etc

## **GENERAL INDUSTRIAL TEXTILES**

This fabric includes reinforcing fibers for protection from hot and cold, electrically conducting textiles, anti-static textiles, metallized products surface , textiles for electronics and data system technology, fiber optics, drive systems, hoses and tile reinforced pipes, fabrics for timing gears, rigid and flexible containers hollow pneumatic system oil spill absorbing blankets, textile reinforced rubber products, filters abrasive fabric for sand paper, fabric for



movie screens, type writer ribbon, sorption system, seals fiber reinforced sealing materials and textiles reinforced adhesive fabrics for luggage laundry



## TEXTILE STRUCTURE COMPOSITES

This fabric includes textile reinforced lightweight building materials, textiles reinforced structure all parts molded articles and profiles textiles, for use in corrosive media textile reinforced motor and machine parts.

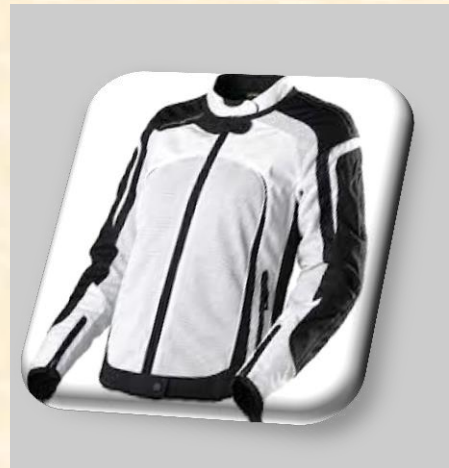
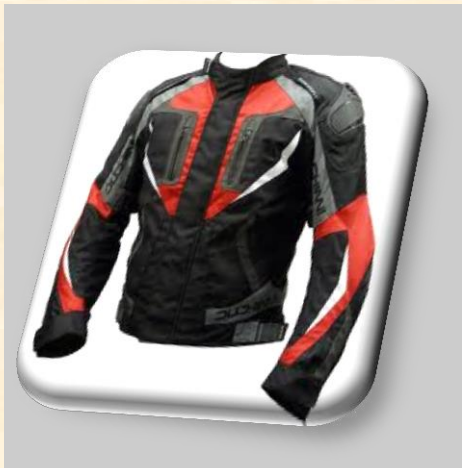
## TEXTILE IN SPORTS AND RECREATION

This fabric includes active wear fabrics, covers for domes and stadiums, stadiums blankets inflatable building for sports, tennis rackets, golf, clubs, football, tennis ball, roller skates, water and snowski ropes, tennis nets, breathable water proof uniforms, tennis court curtanins, fabrics for hunting





vests, race car drivers uniforms, fabrics for hot air balloons fabric for sport shoes, fishing nets and line, swimming pool covers and liners, sleeping bags....  
Etc

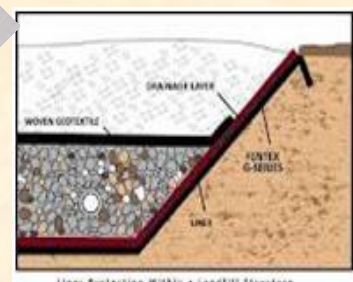
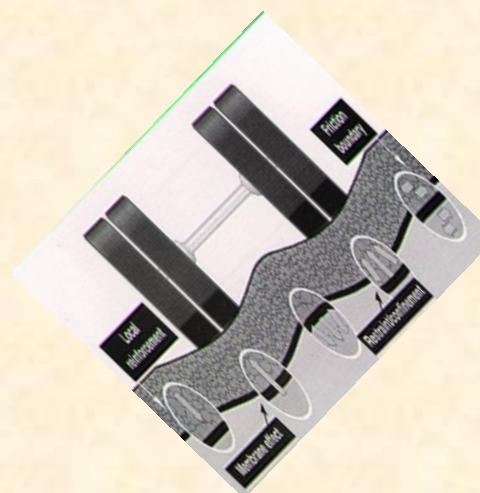
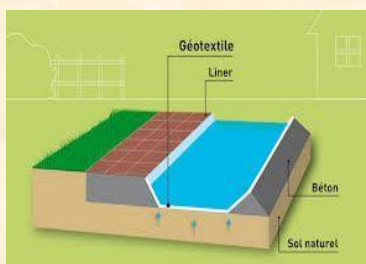


## GEOTEXTILES

Geotextiles are textiles that are incorporated into geo-technical or civil engineering works, Geotextiles is normally taken to refer only to permeable textiles, Geotextiles are normally woven, non woven with few knitted fabric. Geotextiles designed for use as soil filters in hydraulic engineering, draining material enable a more rapid and simple dewatering of wet grounds, stabilization of earth embankments, railway construction, construction of temporary. Roads, construction of embankments,

the construction of road ways on gravel sand.. etc

At this moment, new geotextiles products made of three dimensional network fabric are expected to arouse keen interest, these perforated materials, are used primarily for the stabilization of side slopes inclines and banks, they also offer young plant support and can be used for corrosion protection.





## SAFETY AND PROTECTIVE CLOTHING

Safety and protective clothing are the most diverse market within the industrial fabrics industry. It is referred to by many as a niche industry in which safety and protective clothing is a garment or fabric relate item that protects the wearer from life threatening situations, or risk of injury damage Protective clothing also refers to garment that protect the product or environment from contamination. The safety and protective clothing market is divided into a number of segments including high visibility, abrasion and cut, slash protection ballistics, personal environmental protection Material protection, anti-contaminants, radiation protection and vacuum and high pressure the last major use and the most complex, is protective clothing particularly proximity crash suits and protective garments for firemen and others exposed to high temperature including workers in steel mills, it also used in microwave guard for technicians, pool covers, cargo nets for trucks and air craft, rock retaining nets , anti – slippage mat, mosquito netting gasketings, soft and hard armor safety nets and tuber for high pressure pipes which could explode, protective covers for machine tools, bath mats, rain wear, grass catcher bags, , anti-glare nets, screen in high way medians, building safety and rescue nets.

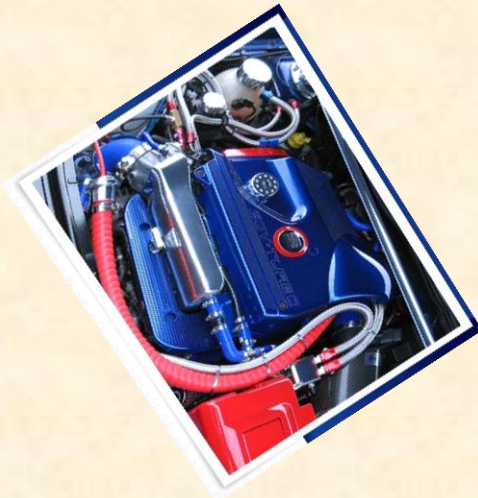
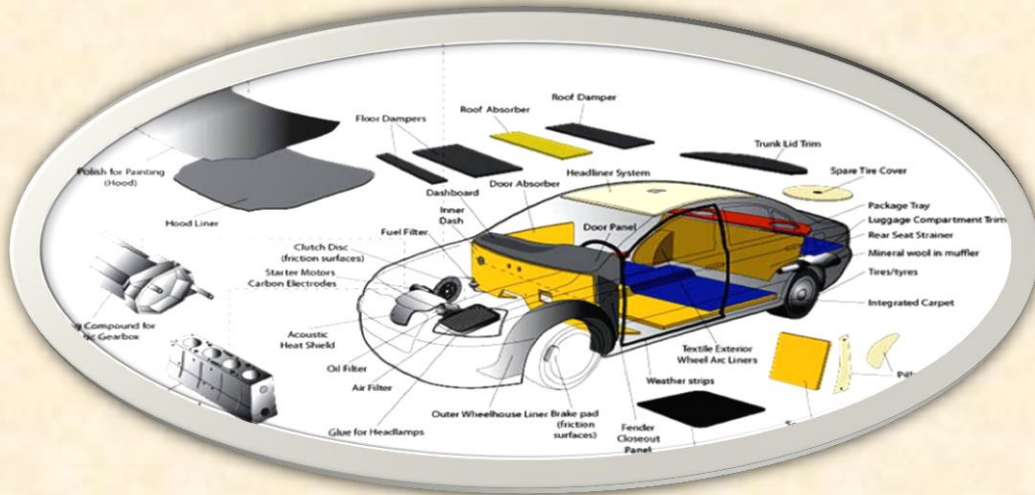


## TRANSPORTATION

This include materials for automotive application, for aerospace industry, marine application, railway vehicles, materials for bicycles, seat belts, air bags, tire card canvas, reinforced interior coverings, textiles for sealing and wall



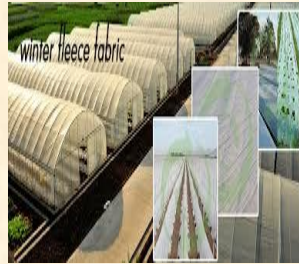
coverings, sound damping, curtain materials, boat and car covers, seat covering materials, fire resistant textiles, hood fabrics, head liners, hoses and drive belts, gaskets and brake ropes linings, textiles in mufflers, seals, insulation materials, cordage, netting, protective covering systems for air craft, floating vessels for making lighter weight and more fuel efficient air planes, vehicles, faster boats rocket nozzles and ablative heat shield textiles for aerospace program.



## TEXTILES IN AGRICULTURE

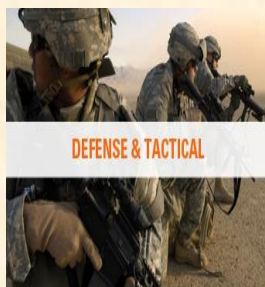
These fabrics include, textiles for landscaping, textiles reinforced plastic and concrete parts, pipes and containers, insect sacks and bird netting covers, belts rope wear, hoses, flexible and rigid containers silage protection system, flexible silos, textile for seed bed protection, temporary agriculture building, subsoil stabilization, soil covering system, drainage and irrigation system, moisture-retaining mats, scrims for protection from hail and ground frost soil sealing

systems for liquid manure pits, erosion prevention textiles, protective work clothing shade fabrics, and textiles in green houses.



## MILITARY AND DEFENSE USES

Military applications include mufflers to lower noise level, tank armor to protect from burring, anti tanks shells, camouflage nets, sand bags, hamlets, flank gacets and ballistic gear, parachutes for space ships, personnel protection, chemical suits, air condition suits, rescue systems for air, water and land vehicles, marine applications, fabrics for bullet-proof vests, inflatable building, military tents. These fabrics should be stronger, lighter, more durable and resistant to fire, lases, decontamination materials and chemical agents. |



## FILTERS

Filters cloth is used in almost all sectors of the national economy, there are two types of filter dry, and wet filters. Both dry and wet filter are made of synthetic or natural fibers, fabric filters are used for milk filter, gravity filter for cans and cooling reservoirs, filter for automatic milking machines connected to piping coolant filtration in grinding machines and milling cutters, oil filters, sugar filters ,distilling filters, the brewing filter, the wine filter, starch filter, mineral oil filter, dairy filters, dust filters, the purification of gases and removal of suspended material from liquids and also for gas and liquid chromatograph, textiles for cleaning and separating of gases and liquid, textiles for hot air , and textiles for filtration in food industry.





## TEXTILES IN ARCHITECTURE AND CONSTRUCTION

These fabrics include reinforcement fibers for concrete and plastics, reinforcing dams, covers for stadiums, textiles sheet products for reinforcement purpose, textiles structural parts, profiles and pipes, textiles for reinforcing and cement bridges, textile reinforced light building materials, textiles drainage systems fabrics, and protect, textiles in public building and convention halls, textiles shuttering materials, textiles facade packing system, textiles roofs and roof sheeting, textiles products for building electric system, insulation against cold heat and noise, tents and tent frames, temporary building, inflatable buildings for ware housing membranes for light weight plane load –bearing structure, pneumatic structure, winter building system, stay ropes, textiles a caustic and systems, owning textiles, textile heating cooling and air-conditioning, textile planting and irrigation systems for terraces roof garden sand and courtyards.

