AEI Tèxtils.cat

THE CATALAN TECHNICAL TEXTILES CLUSTER

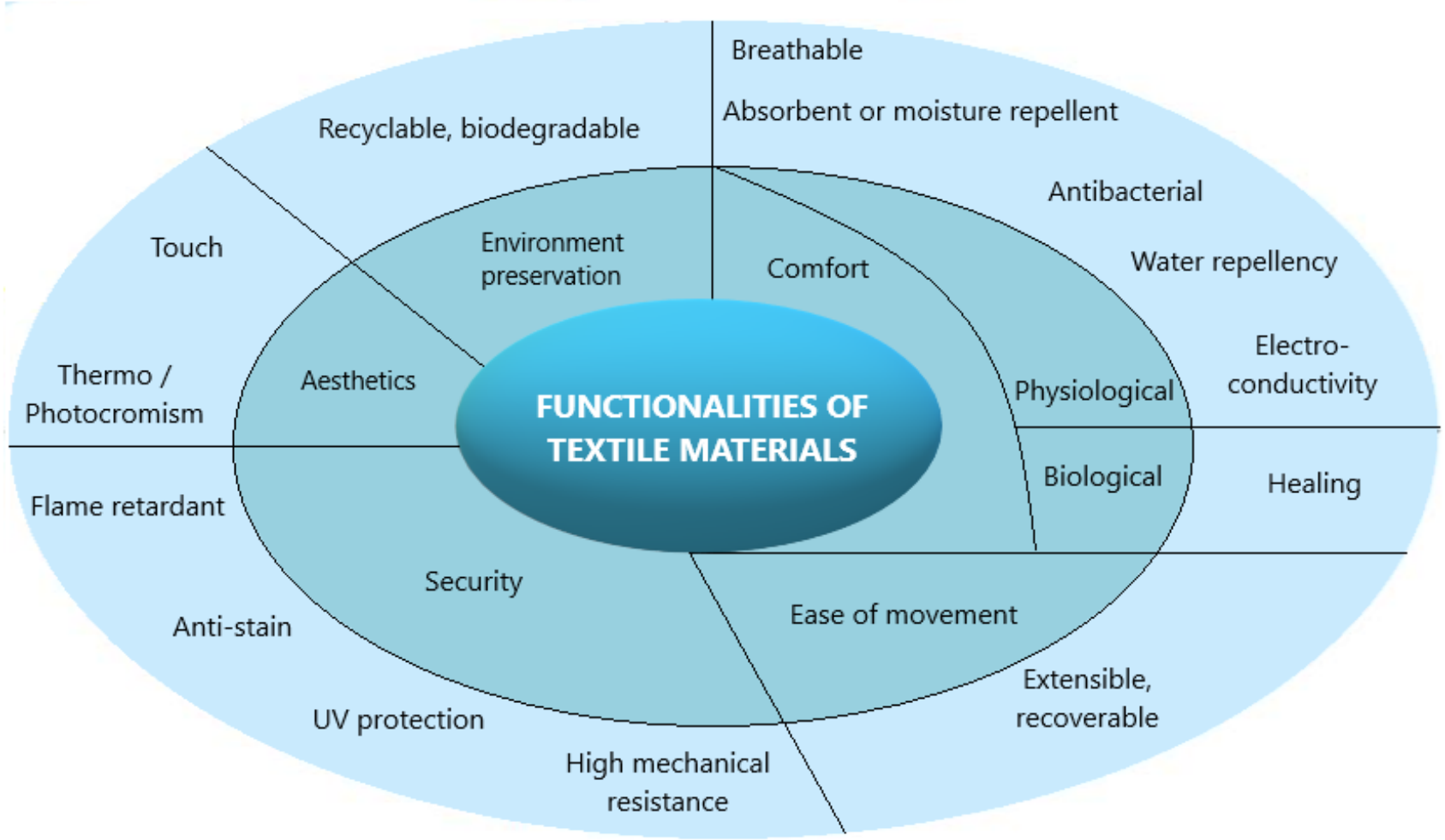









Technical textiles can be defined as *all textile products that cannot be fitted within the traditional sectors of clothing or furnishing*, or better yet: *all textile products in which functionality is as much or more important than aesthetics*.


FUNCTIONALITIES OF TEXTILE MATERIALS
Environment preservation
Comfort
Aesthetics
Security
Physiological
Biological
Ease of movement
Breathable
Absorbent or moisture repellent
Recyclable, biodegradable
Antibacterial
Water repellency
Electro-conductivity
Healing
Extensible, recoverable
Touch
Thermo / Photocromism
Flame retardant
Anti-stain
UV protection
High mechanical resistance

VALUE CHAIN

TECHNICAL TEXTILES SECTOR

FIBRES

NATURAL
- Cotton
- Linen
- Wool…

ARTIFICIAL
- Viscose
- Acetate…

SYNTHETIC
- Polypropylene
- Polyamide
- Polyester
- Acrylic
- Aramid
- PBI...

INORGANIC
- Glass
- Carbon
- Silicon
- Ceramic

YARNS

YARNS TREATMENT
- Monofilament
- Multifilament

SPINNING
- Short-staple
- Long-staple

FOLDING

TWISTING

OTHER PROCESSES

FABRICS

WOVEN
- Width
- Narrow

KNITTED
- By weft
- By warp

BRAIDING

NONWOVENS
- Dry laid
- Wet laid
- Molten laid

OTHER SYSTEMS

FINISHING

PREPARATION

DYEING / PRINTING

MECHANICAL FINISHINGS

COATING

LAMINATING

IMPREGNATING

OTHER PROCESSES

CLOTHING

CUTTING

ASSEMBLING

FINISHING

OTHER PROCESSES

COMPLEMENTARY MATERIALS AND SERVICES

MACHINERY AND EQUIPMENT | CHEMICAL PRODUCTS | RESEARCH AND CONSULTANCY

APPLICATION AREAS

- INDUSTRIAL USES
- CONSTRUCTION AND TEXTILE ARQUITECTURE
- CIVIL ENGINEERING
- AUTOMOBILES
- PACKAGING AND TRANSPORT
- PERSONAL PROTECTION
- SPORTS AND LEISURE
- MEDICAL-HYGIENIC AND SANITARY
- ENVIRONMENTAL PROTECTION
- AGRICULTURE
- HIGH-TECH HOME TEXTILES
- HIGH-TECH CLOTHING

FINAL APPLICATIONS

Civil engineering 	Agriculture and fishing 	Construction and textile architecture 	Medical, hygienic and sanitary applications 
Automobiles and passengers transport 	Packaging and goods transport 	Personal protection 	Sports and leisure 
Industrial uses 	Environmental protection 	Technical textiles used at home and in public buildings 	Technical textiles for clothing 

Textile materials for civil engineering (also called geotextiles) are used on or below ground level to provide the following functions:

- Separation of subsoil layers in roads, airports and railroads.
- Reinforcement: soil consolidation, subsoil reinforcement, slopes protection and riverbanks protection.
- Drainage systems in roads and tunnels.
- Waterproofing in reservoirs, tanks, swimming pools, tunnels or dumps




AGRICULTURE AND FISHING

Textile materials in this area are used to facilitate and improve the conditions of agricultural holdings, in gardening and for fishing. They help to enhance the efficiency and productivity of the sectors they cover. Products can be classified in 2 main groups:

- Textiles for agriculture crops, horticulture and gardening: soil covering, protection of crops (from hailstones, sun, birds, insects, wind), irrigation and drainage systems, silos, liquid and water storage systems, temporary constructions, ropes for agriculture, greenhouses and meshes.

- Textiles for fishing: nets, cords, ropes for fishing, marine farming and fish farms.




CONSTRUCTION AND TEXTILE ARCHITECTURE

Textile materials used in this sector are resistant to deformation and extension under tension to wind, water and to degradation.

Main product groups/functions are: Soil and subsoil stabilization, textile reinforcement for concrete, reinforcing meshes, textile materials for formworks, structures for facades, insulation (heat, cold, noise, electromagnetic waves), fillers, insulating screens, walls and ceilings, draught excluder, waterproof fabrics for plane covers, materials for interior facing, safety nets, textile architecture and temporary constructions (awnings and canopies, marquees pavilions and coverings, inflatable constructions, tensed structures, covers for ponds and water tanks).




MEDICAL, HYGIENIC AND SANITARY USES

The area includes all the textile materials used in medical, sanitary and personal care applications, both in consumer markets and in medical markets. They include a well-defined range of products with considerable variations in terms of product benefits and added value. They can be classified in 3 main groups:

- Materials for hospitals: hospital equipment and clothing.
- Sanitary-hygienic products: surgical tapes, gauzes, absorbent cotton, conventional and elastic bandaging, incontinence dressing, feminine hygiene products, diapers, dialysis and filtration material, immobilization material, disposable garments, surgical masks, cleaning and cosmetic wipes.
- Surgery and orthopaedics: prosthesis for locomotive apparatus, girdles, compression *stockings*, orthopaedic protective gear (ankle, knee supports, etc.), suture threads, implantation tubes in circulatory apparatus.




AUTOMOBILES AND PASSENGERS TRANSPORTATION

This application area includes all the companies involved in the manufacture of textile components for ground, naval and air transportation. Products classification can be done in four main groups:

- Materials for automobiles: fabrics for tyres, tubes and ventilation hoses, nets and grids, filters, conveyor belts, safety belts, upholstery, carpets and coverings, insulating materials, air-bags, textile materials for moulded pieces, battery separators and protective car covers.
- Fireproof textile materials for interior design in public ground transport (bus, rail, etc.).
- Fireproof textile materials for interior design in air and maritime transport.
- Textile materials for the aerospace industry.

PACKAGING AND GOODS' TRANSPORTATION

It includes products with a textile component which are used to cover, contain or hold goods. Their final aim is to protect, handle or present them.

Products can be divided in the following groups: tarpaulins for trucks, materials for shipment protection, textiles for packaging, conveyor belts, big bags and containers, slings and lashing systems and plaited cables for packaging and transport.

PERSONAL PROTECTION

It includes textile materials which have the following functions:

- Protect workers against dangerous elements, materials or processes that may occur during their working hours.
- Protect the products, the workplace or the environment.
- Protect people from other people in security/defence situations.
- Products with these functionalities can be classified as follows:

✓Textiles for safety wear (PPEs) against: cold, chemical agents, electrical shocks, heat and flames, mechanical actions, nuclear danger, electromagnetic-radiation, X-rays, dust, falls and sharping elements.
✓Emergency and rescue equipment: life preserves, life jackets and survival equipment, hoses and rescue equipment, fire hoses.
✓Protection in extreme sports.
✓Reflective textiles.
✓Protection of clean rooms.
✓Textiles for security forces: nets and camouflage materials, sand bags, NBC protection equipment, tents, bulletproof vests and anti-fragmentation curtains and fabrics and materials non-detectable by IR.
✓Security gloves.
✓Security footwear.
✓Workwear and uniforms.



SPORTS AND LEISURE

This area covers the equipment and facilities for sports practice and the enjoyment of leisure time. Products can be classified in eight main groups:

- Textiles for sportswear, leisure wear and footwear.
- Textiles for sports material: racket strings, gloves, kneepads, balls, nets.
- Textiles for watersports: sails, inflatable boats, airbeds and other leisure products, life jackets, ropes and cables, composites for light boats' hulls, diving equipment.
- Textiles for air sports: hang glider, balloons and parachutes, high-resistant ropes, composites for aeronautics.
- Textiles for extreme sports: Skating and fencing apparel.
- Textiles for mountain sports: tents, backpacks, sleeping bags, etc., fabrics for skiwear, ropes for climbing and bungee jumping, protection against extreme weather conditions.
- Textiles for sports facilities: coverings for pools and courts, artificial turf.
- Textiles for garden, beach and camping furniture

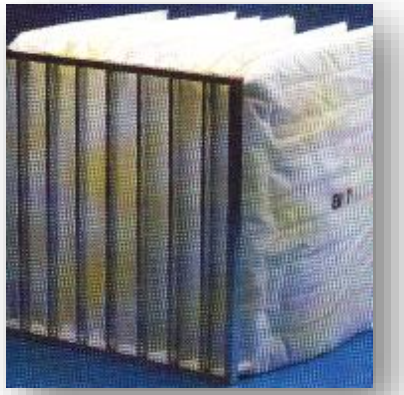



INDUSTRIAL USES

It includes all textile materials that have a specific role in industrial processes such as:

- Transportation of materials between processes.
- Transportation of materials through machines and by energy transmission
- Separation and purification of industrial products.
- Cleaning of gases and wastewater.
- Dirt and oil absorbency.
- Use as a substrate for coated products and composite materials.



ENVIRONMENTAL PROTECTION

It includes products with textile components used to protect the environment. Five kind of protection are considered:

- Atmospheric protection: Gas/solid separation
- Water protection: Systems for solid/liquid separation, storage systems for residues and dumps
- Soil protection: river banks and coastal, dune stabilization
- Vegetation protection: protection against forest fires, reforestation
- Textiles for erosion control
- Sound insulation: open-air sound barriers, interior sound insulation




HIGH-TECH CLOTHING AND HOME TEXTILES

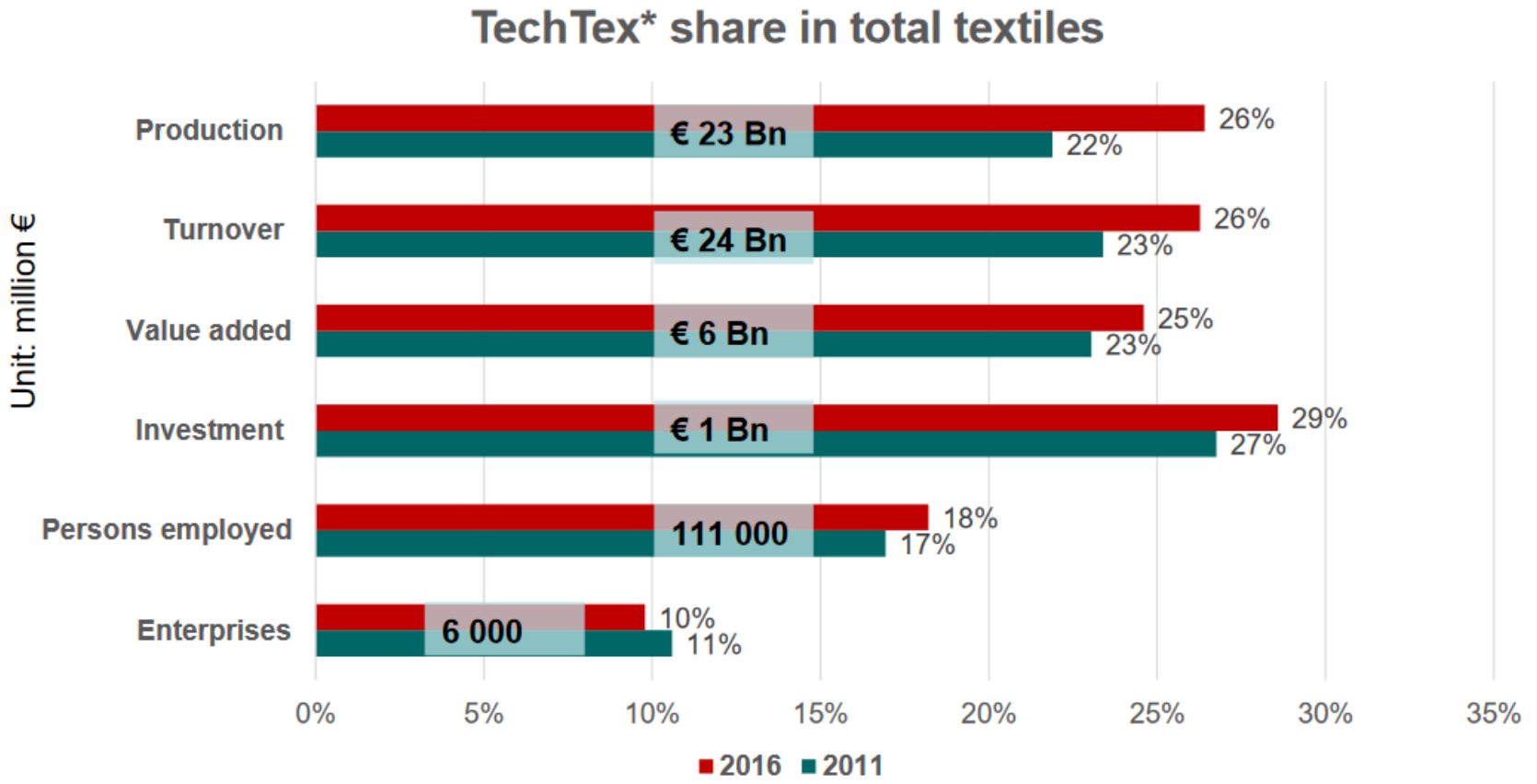
In the areas of high-tech clothing and home textiles, that are border line with both traditional sectors, textile products are considered "differentiated" by some innovative technological characteristic at the present time and that, possibly in the future, when it is consolidated as usual, they will no longer be considered as a technical textile.

For home textiles, some examples are wall coverings, curtains or carpets that are located in public places, where fireproof is a requirement by EU Directives.

As high-tech clothing; footwear components, interlinings, e-textiles, etc. can be considered.

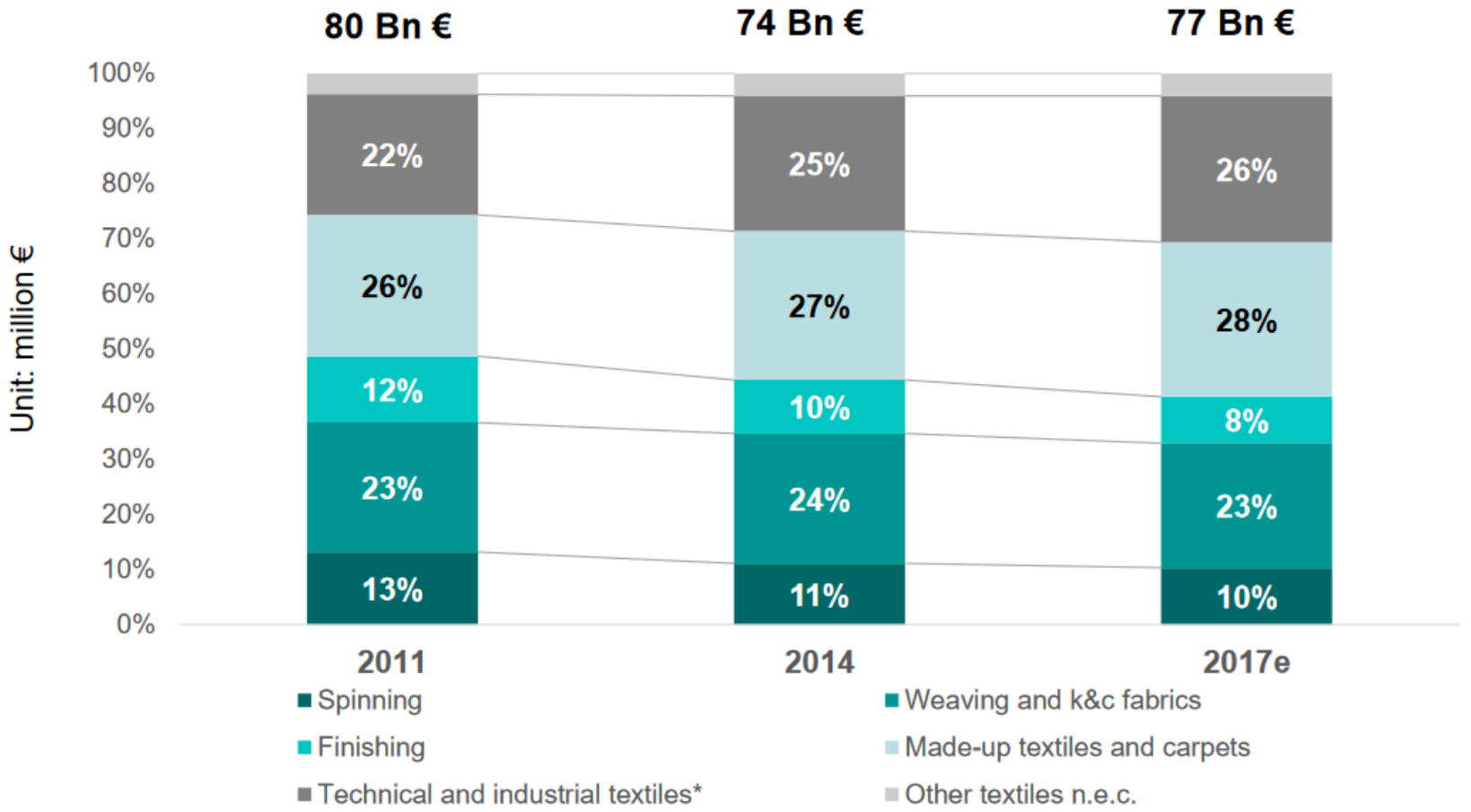



KEY FIGURES



* including non-wovens, cordages, twine and netting

PRODUCTION



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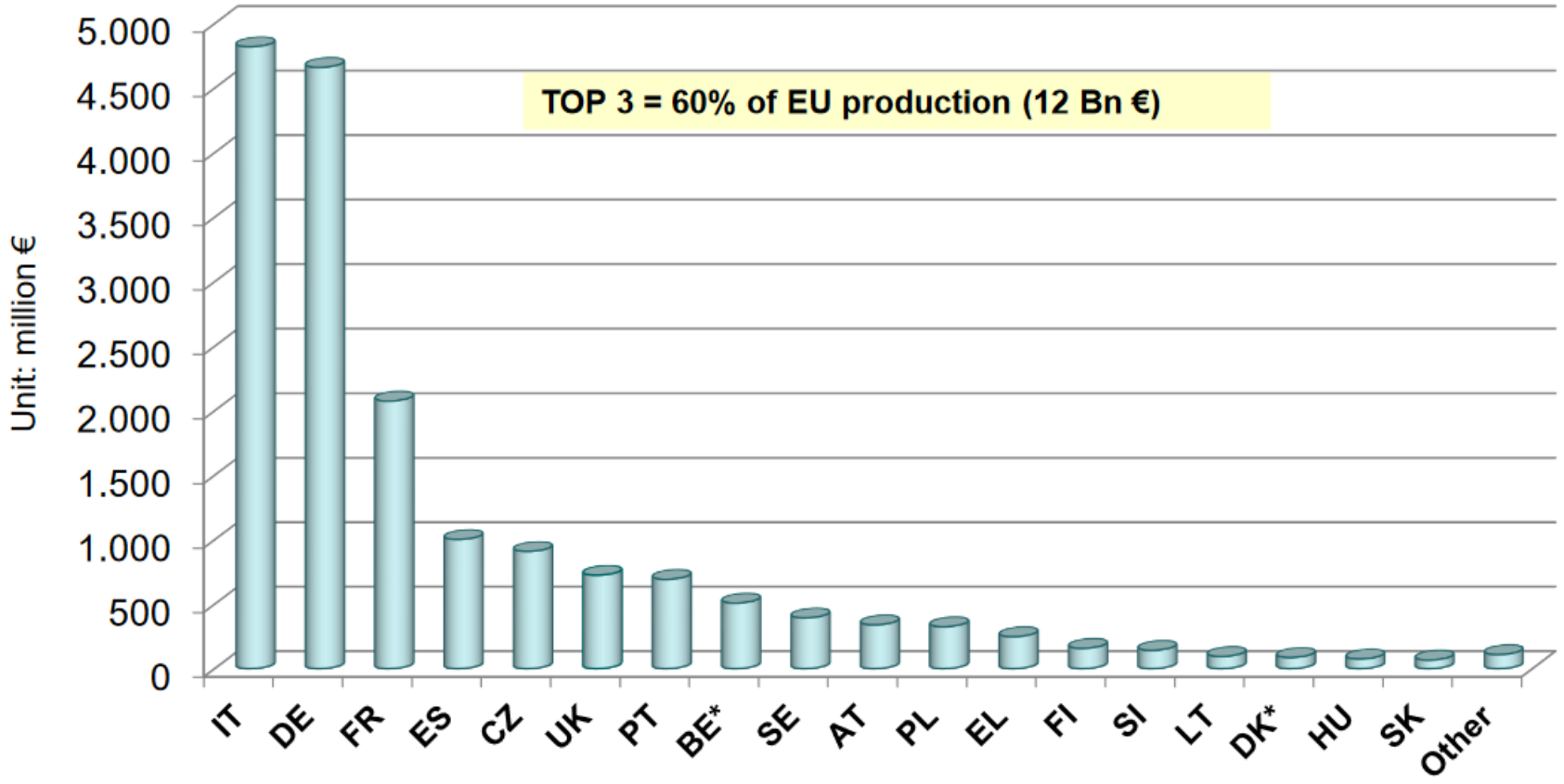
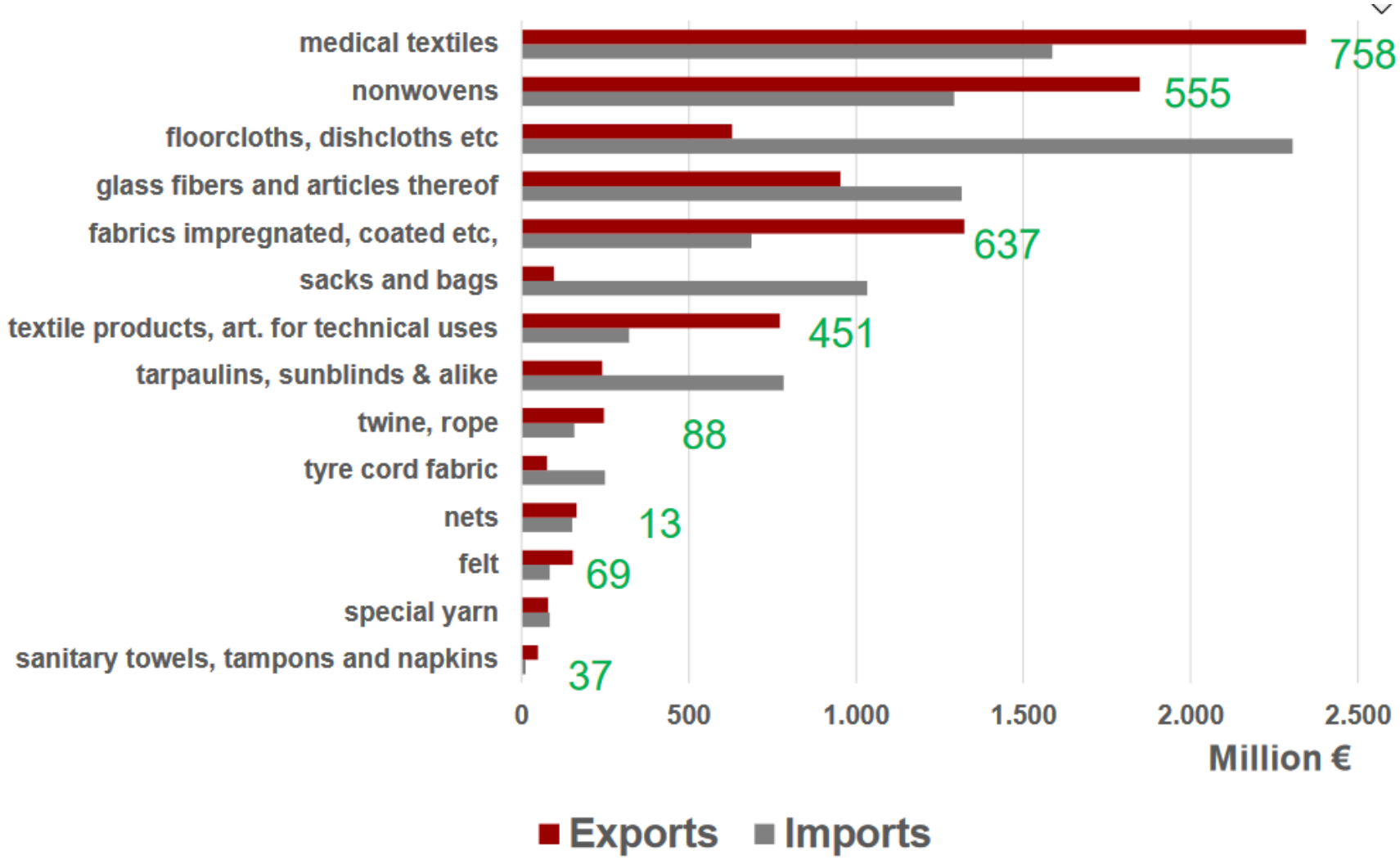
PRODUCTION



*: BE and DK: excluding non-wovens; RO and NL: n.a. **Source**: Euratex calculations on Eurostat 2016 data

TRADE 2018


medical textiles
nonwovens
floorcloths, dishcloths etc
glass fibers and articles thereof
fabrics impregnated, coated etc,
sacks and bags
textile products, art. for technical uses
tarpaulins, sunblinds & alike
twine, rope
tyre cord fabric
nets
felt
special yarn
sanitary towels, tampons and napkins
758
555
637
451
88
13
69
37
0
500
1.000
1.500
2.000
2.500
Million €
Exports
Imports

EU FIGURES

- The Technical Textiles' sector is today a major contributor to the EU textile industry.

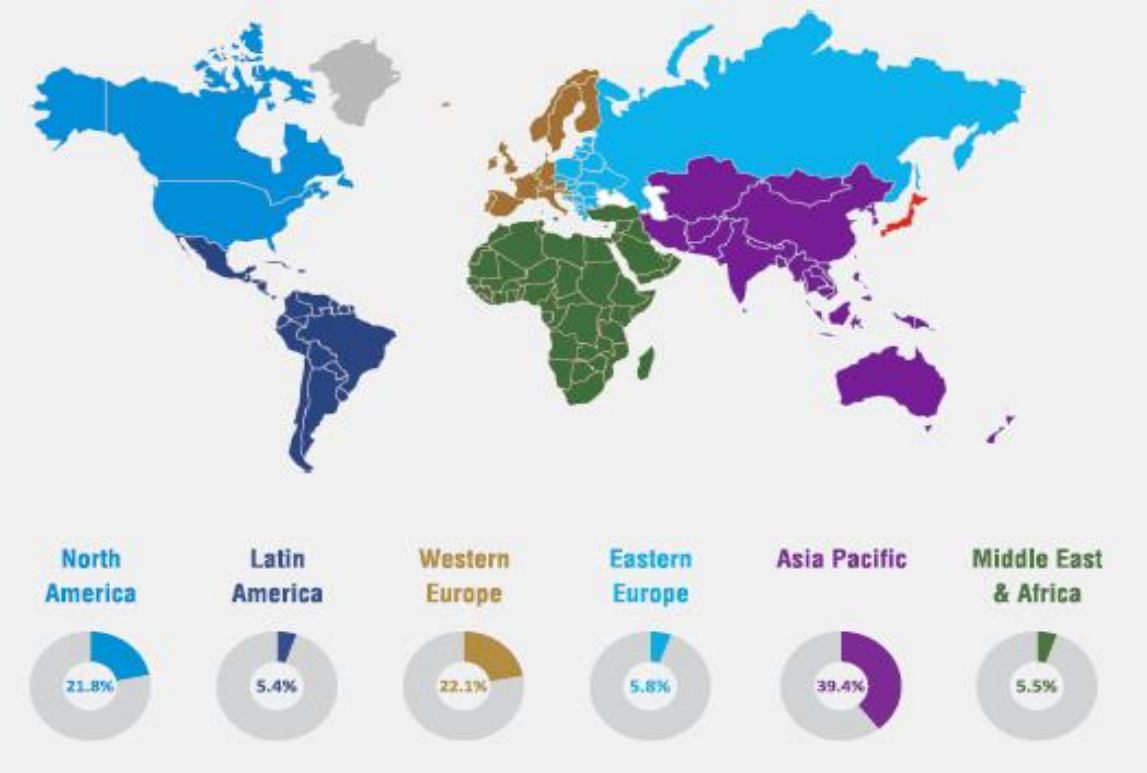
- 27% of total textile industry turnover (a growing percentage). EU industry turnover of Technical Textiles reached about € 24 Bn

- Italy and Germany are the leading producers but Technical Textiles are gaining in importance all over Europe.

- Technical Textiles' trade have grown very fast and play today a leading role among EU textiles exports
- The US is Europe's largest Technical Textiles' customer, followed by China, which has registered very fast growth in recent years.

- Medical textiles and non-wovens are the main products exported by the EU.

- These positive trends are expected to continue.



Source: Future Markets Inside, 2015

The strongest growth is now found in developing markets, in the Far East, particularly in China, as well as in Turkey.

Worldwide vs European consumption (2014) of technical textiles

World market Bn USD	EU consumption Bn USD		EU as % of world market
9.9	0.8	Agrotech	8%
16.5	3.1	Buildtech	19%
5.4	0.8	Clothtech	14%
4.2	0.5	Geotech	12%
14.9	3.6	Hometech	24%
25.6	**5.1**	**Indutech**	20%
4.9	1.2	Medtech	24%
8.5	2.0	Hygiene	24%
24.3	**4.7**	**Mobiletech**	19%
17.6	3.5	Packtech	20%
7.0	0.7	Protech	10%
8.1	1.2	Sporttech	14%
147.0 Bn USD	**27.1 Bn USD**	**Total**	

Largest segments

Source: Gherzi application based world and regional model, Prodcom and UN Comtrade statistics

FINSA

Specialists in manufacture of technical fabrics for filtration

- Fabrics for press filters
- Belts for pressure filters
- Belts for vacuum filters
- Fabrics for rotary filters
- Fabrics for disc filters
- Filter bags
- Bags for centrifuges
- Mesh fabrics
- Woven fabrics and metallic mesh

LIASA, La Industrial Algodonera


- Activity: Tehnical products of high added value
  - Cords and elastic cords, fire retardant and water repellent.
  - Injection of plastic parts into the ends of the cords and ribbons (innovative solutions tailored to the client and the sector).

- Turnover: 6.000.000 €
- Exportation: 50% s/ turnover, on the 5 continents
- Employees: 50 personnes
- Year of foundation: 1.918

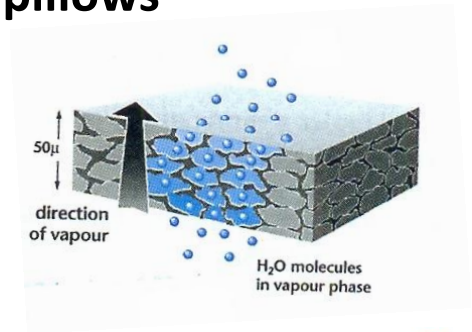






MITSA, Manufactures Industrials de Tortellà

Vertically integrated industry, specialized in waterproof fabrics for the protection of mattresses and pillows



Dermofresh™

- Founded in 1986.
- 2 manufacturing facilities: 7000m² + 2500 m².
- 45 workers
- More than 7 Million Euro of turnover
- Exportation: more than 80%

Working for other companies to creating its own product

EXAMPLES OF TECHNICAL TEXTILE COMPANIES IN CATALONIA

Fabrics for fashion → **Fabrics for personal protection**

C.P. ALUART

MARINA TEXTIL

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