



A.T.E. ENTERPRISES PRIVATE LIMITED

since 1939



Textile Engineering Group (TEG)



NONWOVENS IN MEDITECH PROCESS & TECHNOLOGY

By

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A.T.E

Coimbatore



What Is Nonwoven?



“Nonwoven fabrics is a sheet or web structures bonded together by entangling fibers or filaments by various mechanical, thermal or chemical processes” (INDA)

Nonwoven are not?

Knitted/Woven/Tufted/Paper



Nonwovens: Disposable & Durables



Disposable applications

Medical

- Drapes
- Surgical / Isolation gowns
- CSR Wraps
- Caps ,Facemasks ,shoe covers

Hygiene

- Baby Diapers, Training pants
- Feminine Hygiene products
- Adult Incontinence products

Wipes

- Baby
- Household
- Industrial

Durable applications

Geotextiles

- Soil Stabilization
- Drainage
- Road and Rail construction

Filtration

- Air, gas, liquid

Agriculture

- Crop covers
- Greenhouse shades
- Mulches

Home Furnishing

- Carpet backing
- Furniture Construction

Building and Construction

- Insulation
- Roofing

Automotives

- Carpets & Headliner.
- Door panel insulation.
- Carpet backing.

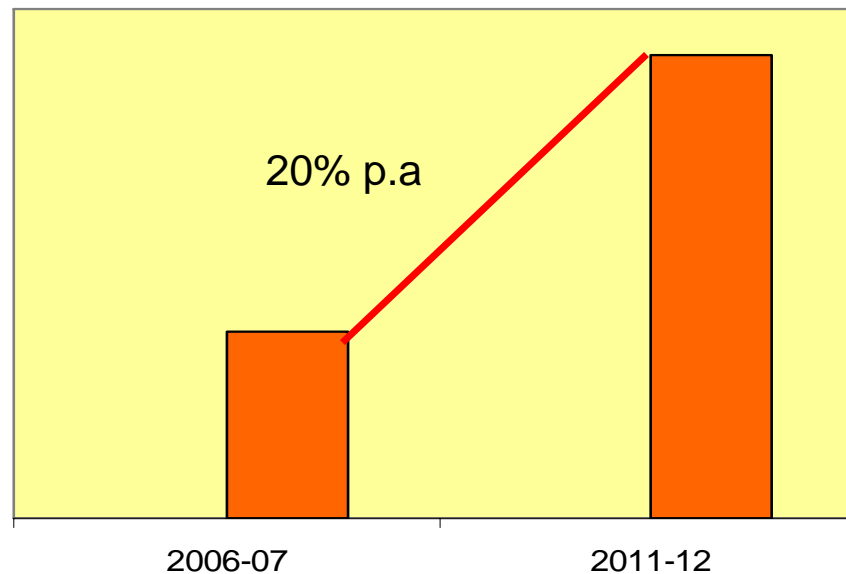


Growth potential for Meditech in India



Products:

Sanitary napkins, incontinence diapers, baby diapers, surgical Dressings, healthcare textiles, sutures, medical devices & implants.



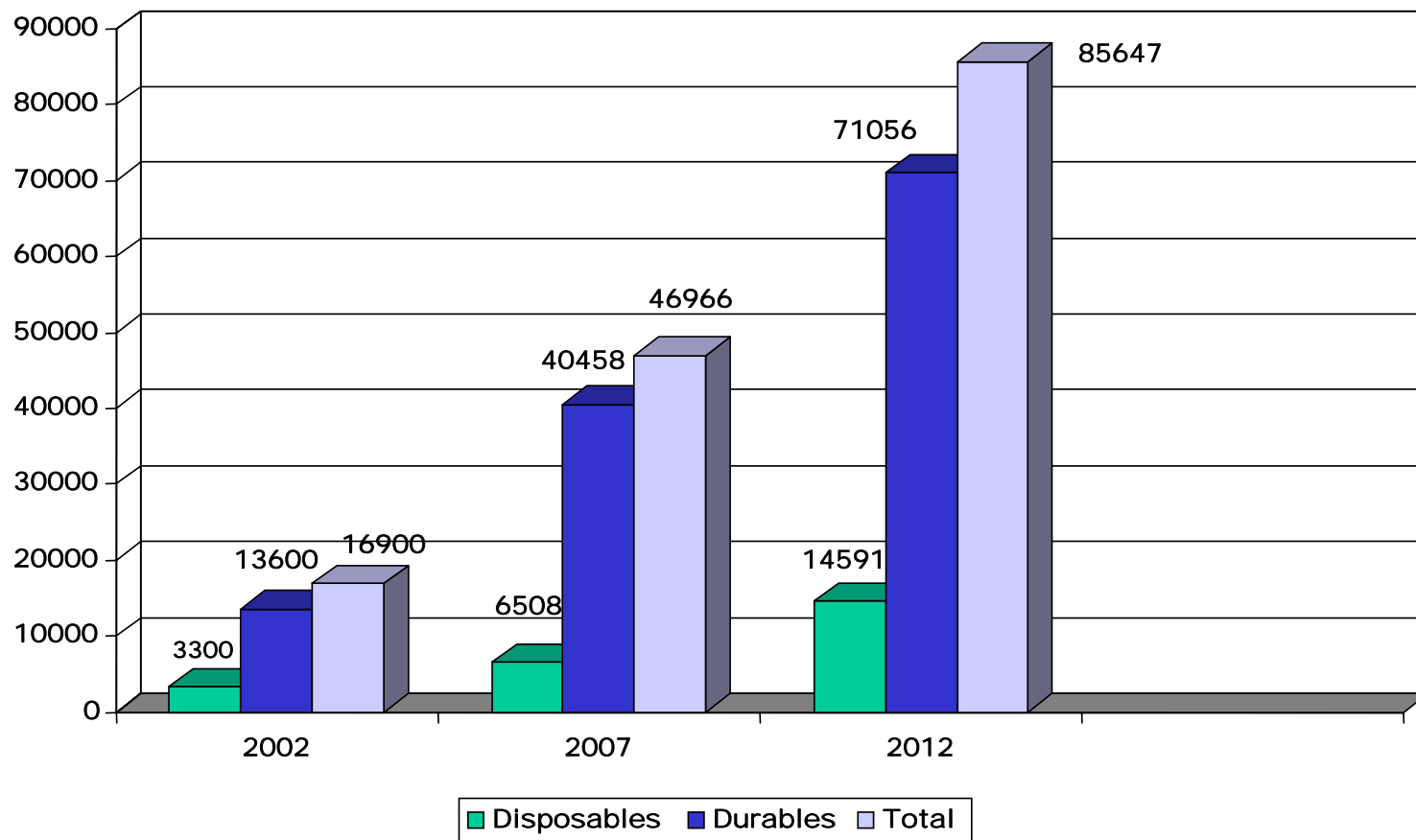
Products in Medical Textiles



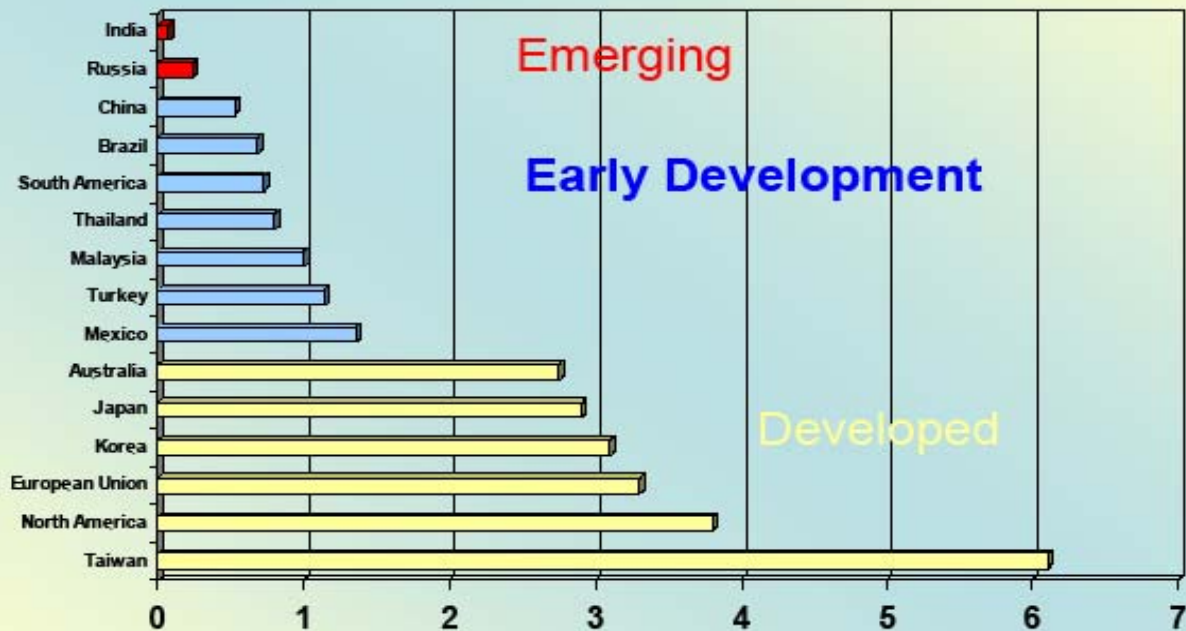
- Textiles for implantations: Artificial joints, vascular grafts, Heart valves, Artificial ligaments
- Non-implantable textiles: Wound care, Bandages, Gauzes.
- Textile in extracorporeal devices: Artificial kidney, Artificial liver, Mechanical lungs
- Health care & hygiene products: Surgical gowns, Caps, Masks, Blankets, Wipes, Diapers,



Disposables VS Durables in Indian Scenario



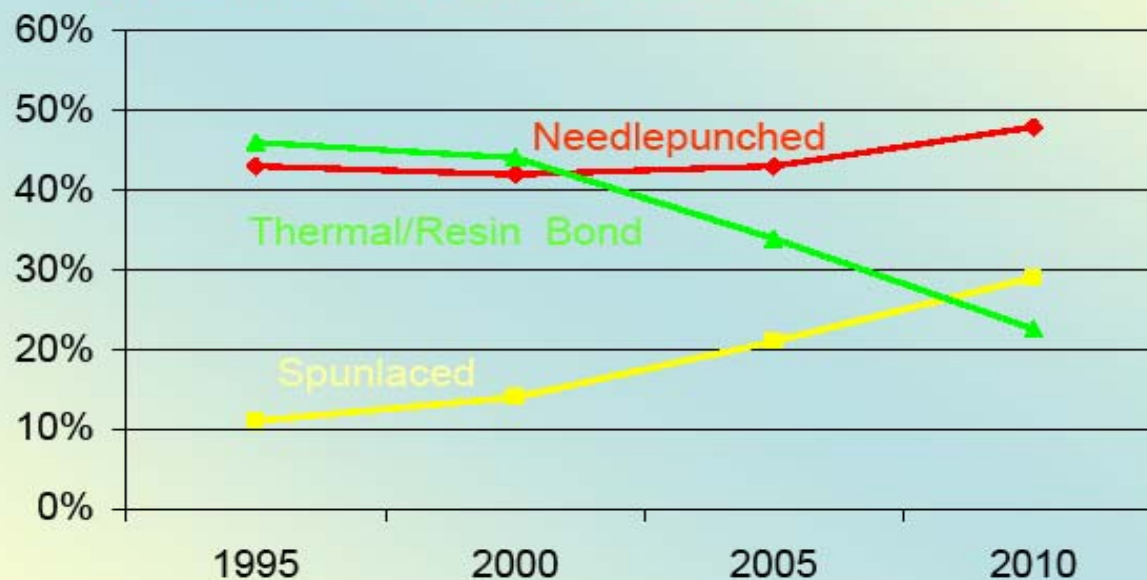
Nonwoven Production per Capital (Kilograms)



Source: INDIA Estimates, Ian Butler, AFINT 2006

Outlook for Carded Technologies

(% Share of Total Carded Nonwovens)



Source: INDA Estimates, Ian Butler, AFINT 2006



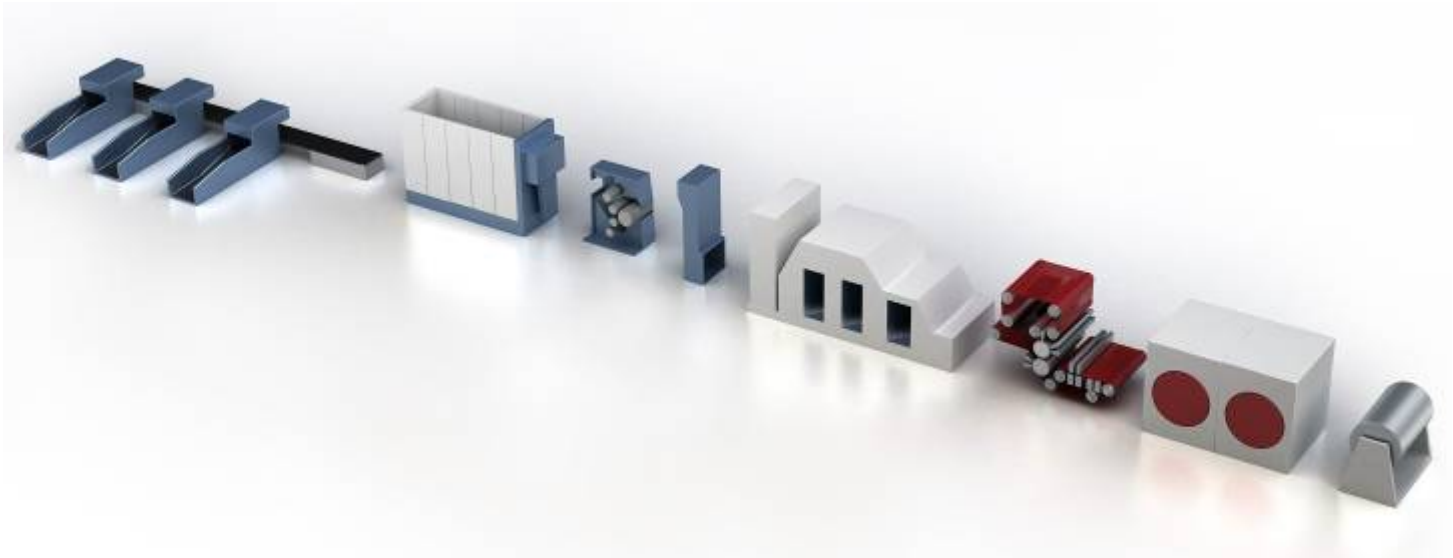
Complete nonwovens production lines for all kind of applications :



- Bonding of nonwovens
- Finishing of nonwovens
- Drying



Spunlace / Hydroentanglement Line



Line layout for cotton fibers



1st stage

Cleaning
Trützschler



Bleaching



Opening/drying
Fleissner

2nd stage

Blending
ERKO Trützschler



Web formation
ERKO Trützschler



Bonding
Fleissner



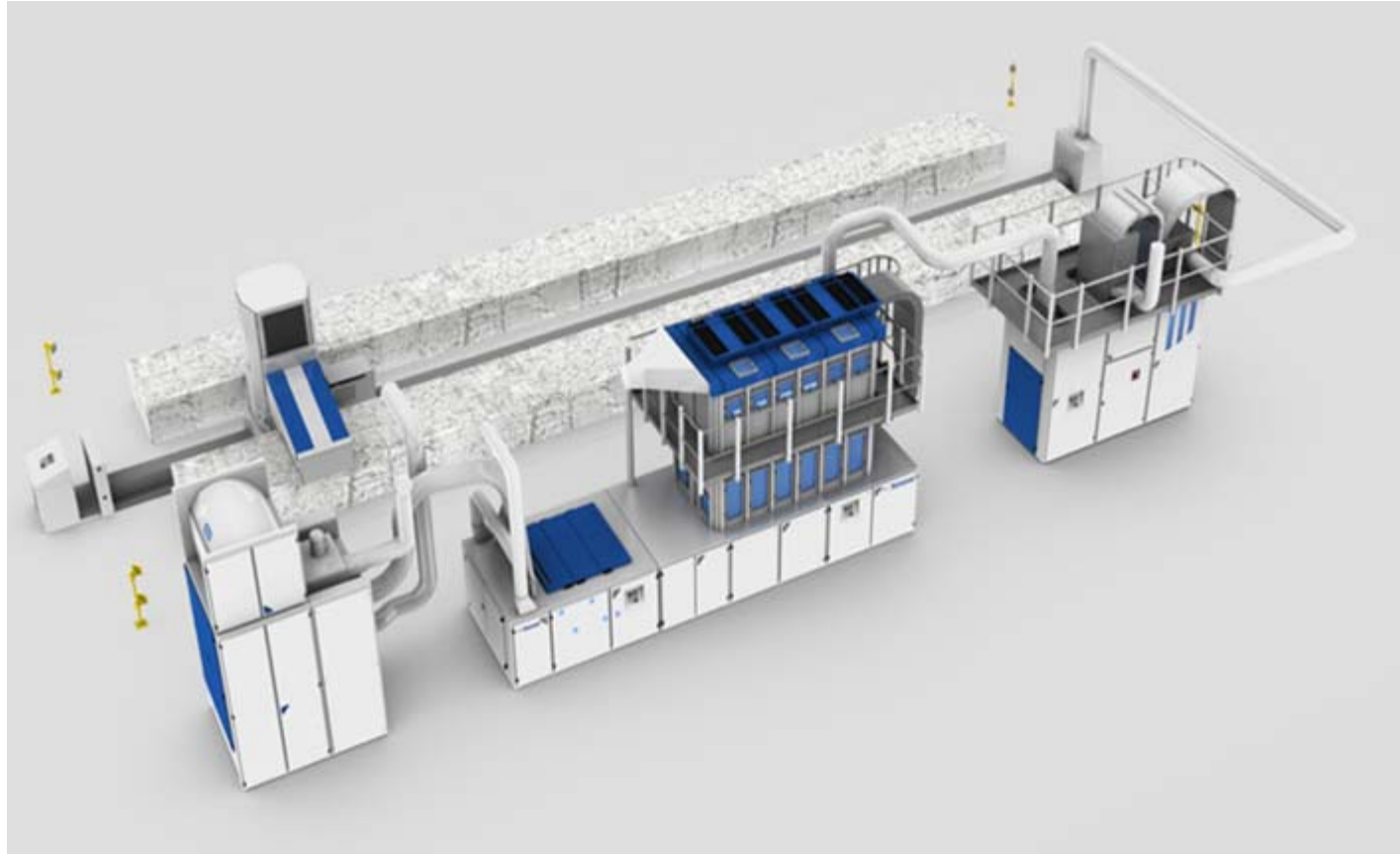
Spunlace lines for natural fibers : Cotton



- Grey opening machinery for cotton fibers **TRÜTZSCHLER**
- Bleaching and drying machinery of cotton **FONG'S**®
- Opening of bleached cotton **GAVAZZI**
- Web forming machinery **ERHO TRÜTZSCHLER**
- Hydroentanglement **FLEISSNER**
- Drying **FLEISSNER**



Opening/ Cleaning/Carding Of Grey cotton fibers



TRÜTZSCHLER



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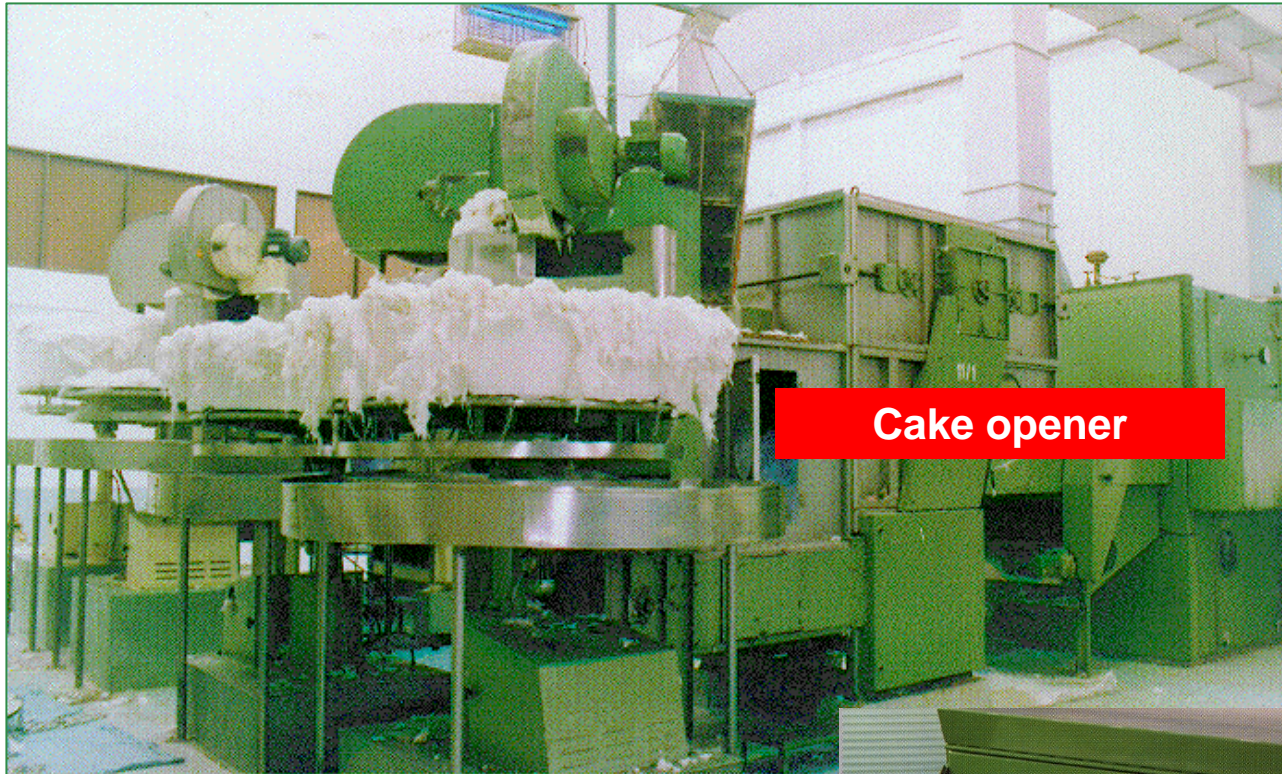
Stamping Press



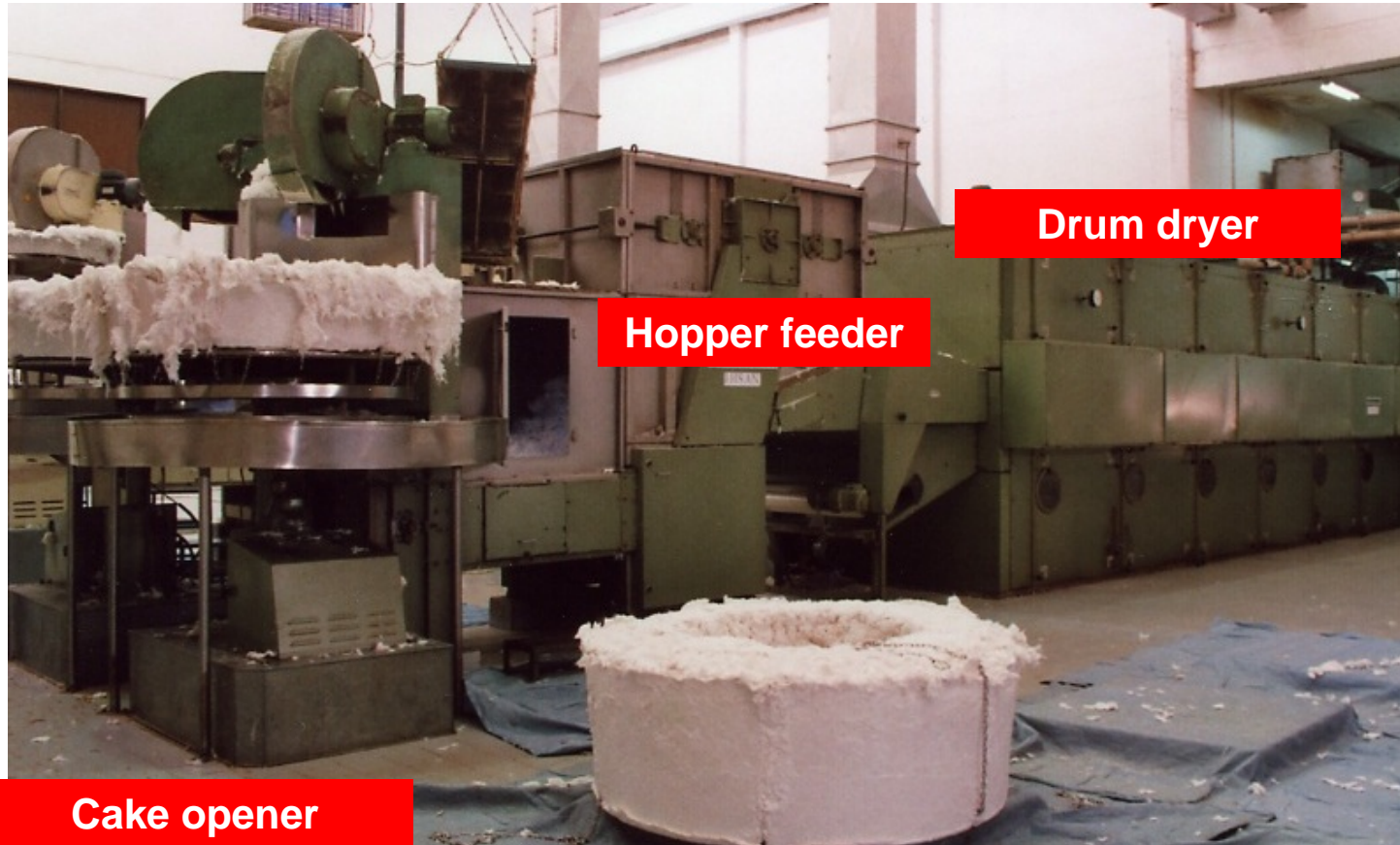
Bleaching



Cake opening



Opening and drying of bleached cakes



Opening of bleached cotton bales



Fine opener EFO



Opening rollers



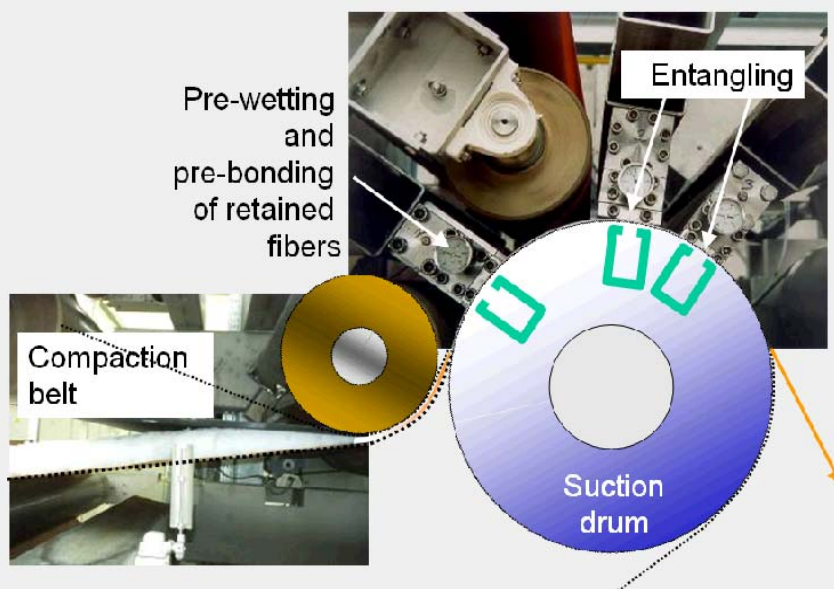
Blending of bleached cotton bales



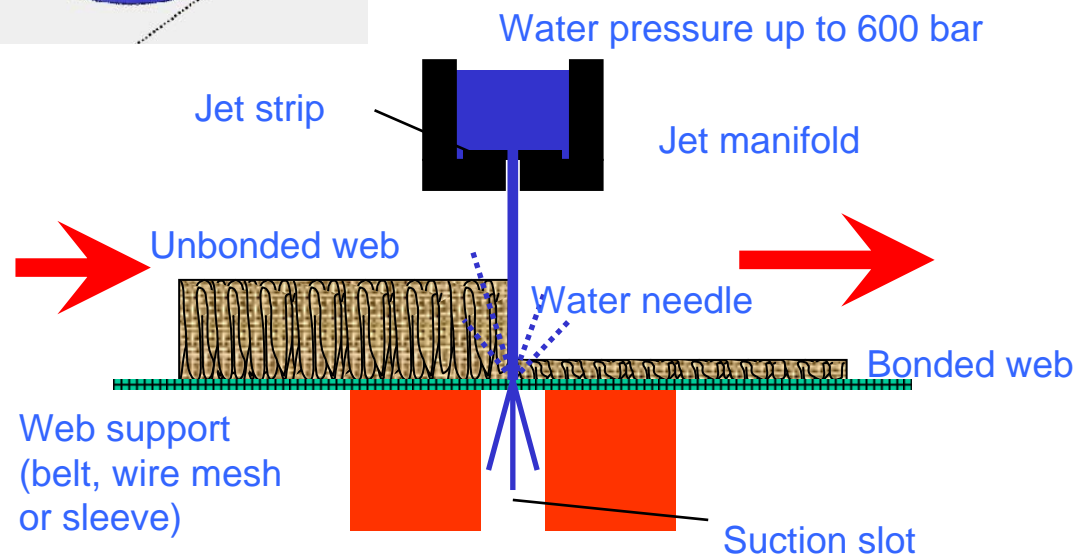
Web formation by Randome/Airloy Card



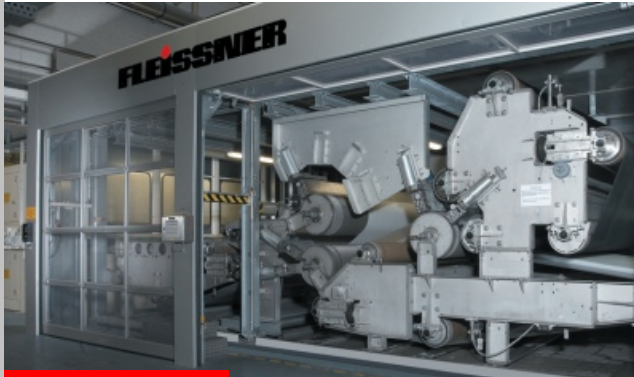
Web-Bonding



Spunlace Principle (Hydroentanglement)



AquaJet Family



AquaJet



LeanJet



MiniJet



AquaJet



Features

- Weight range from 20 to 800 g/m²
- Standard speed range from 5 to 300 m/min
- Max. pressure up to 400 bar
- Working widths range from 1.2m to 5.4 m
- Wipes and cotton pads, Filtration non-woven, Technical non-woven, Synthetic leather and Table clothing

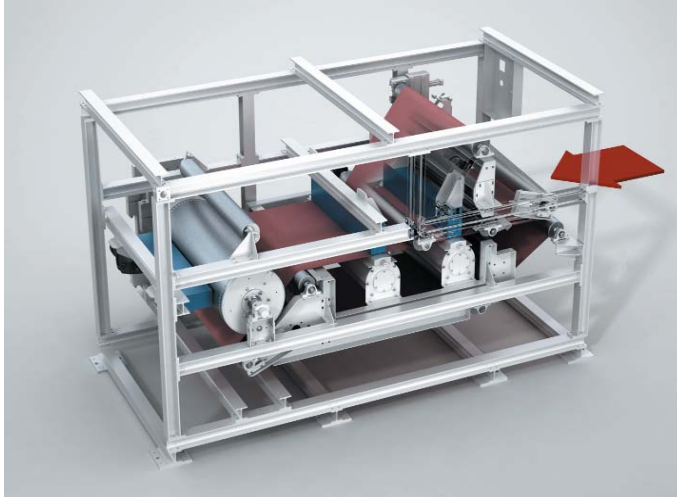




Features

- Consisting of drum or belt-belt compacting system
- Pressure upto 150 bar
- Max. weight: 100 g/m²
- Max speed of 150 m/min
- Working widths: 1.2 to 3.6 m
- Wipes & Cotton pads





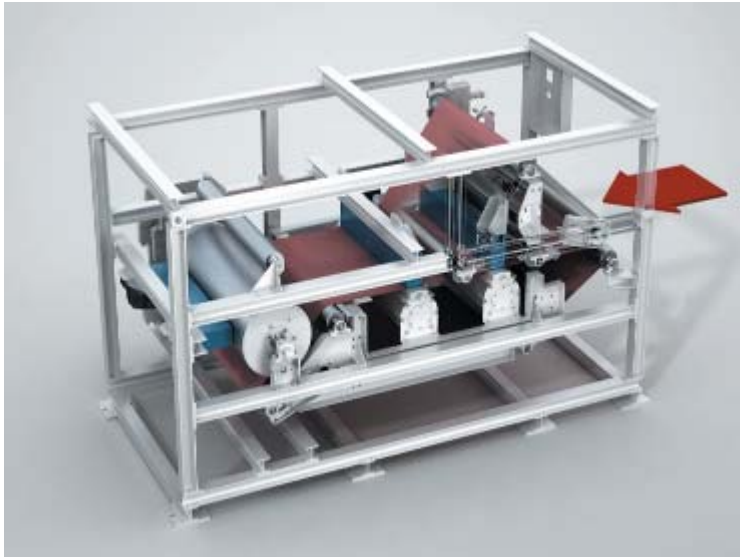
Feautres

- Working width of 500 and 1,000 mm
- Pressure up to 400 bar
- Speeds up to 55 m/min
- Max. entangling steps: Belt 1, Drum 1, Drum 2
- All synthetics and natural fibers can be accommodated



TC-07H For Hygienic and Nonwoven Applications

**Line for
Hydroentanglement**



**TC- 07H with
Shoving Unit TC-SU**



Drying



Drum dryer

Belt Oven



Winding



Benefits Of Spunlace Technology



- **Replaces chemical binders**
- **Softer/drape-able fabric**
- **Absorbency, strength, flexibility**
- **Allows for designs/patterns**
- **Lint free**
- **No binder/easier to recycle**
- **Light weights: Faster & lower cost vs. Needlepunch**



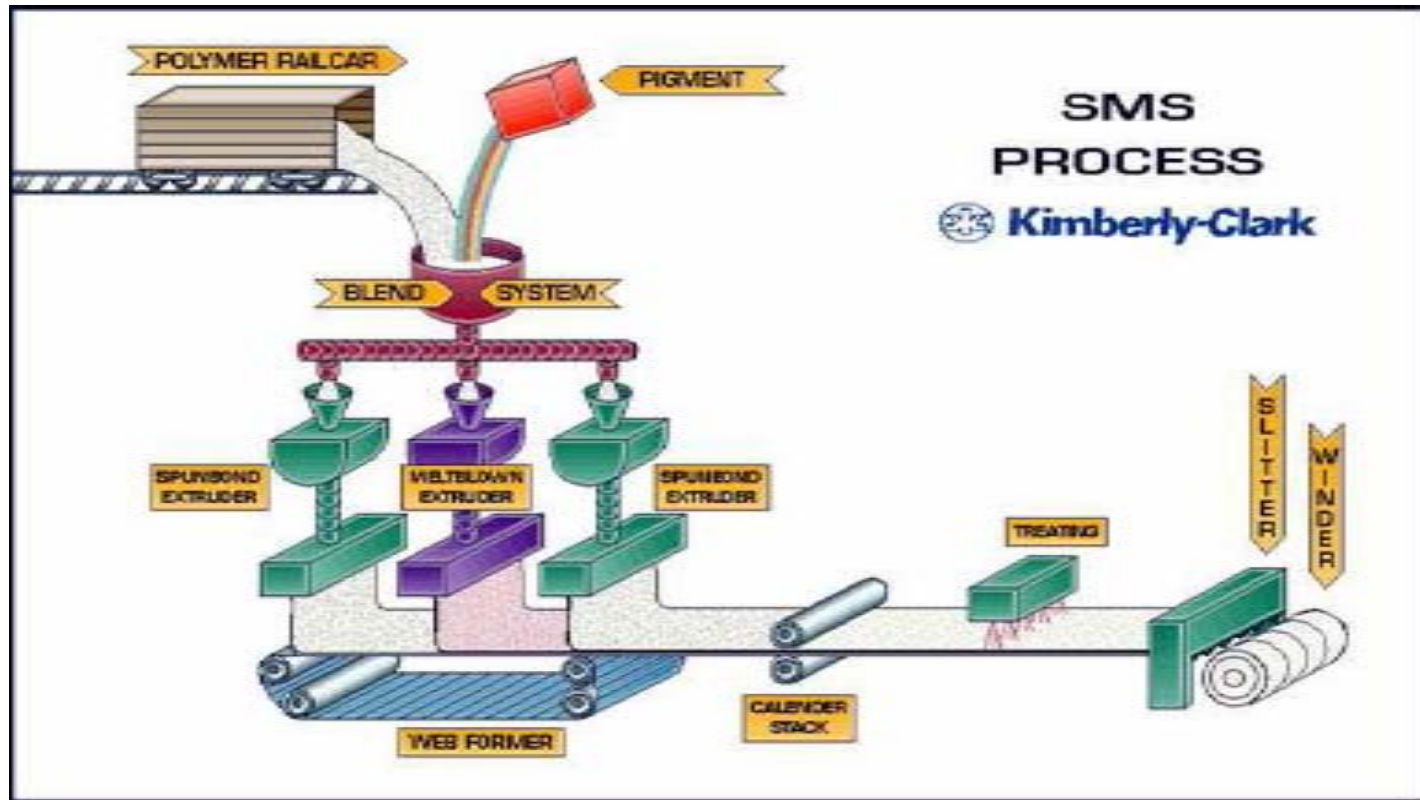
Applications



What Is SMS?



Spunbond + Meltblown + Spunbond



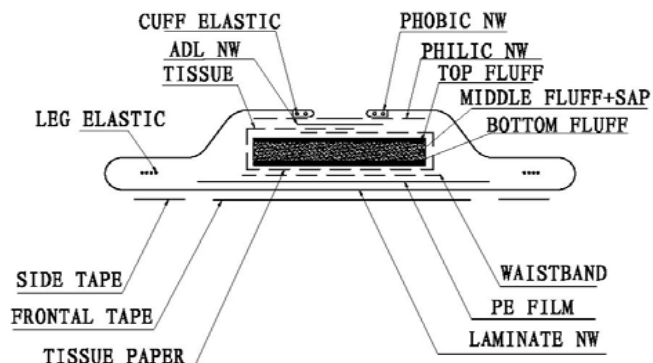
- **Baby diapers- standing leg cuff**
- **Adult diapers**
- **Medical gowns**
- **Industrial protective apparel**



Converting Machines



Diaper Machines



Diaper Composition

- PP/PET Fluff+SAP: 70%
- PP Topsheet: 10%
- PE Backsheet : 13%
- Other Components: 7%
- Frontal tape
- Laminate NW (optional)
- Waistband (optional)

The Indian market for baby diaper is estimated that the diaper market would grow at a rate of around 5-10% per year.



Lady Napkin Machine



Basic structure:

Fluff core

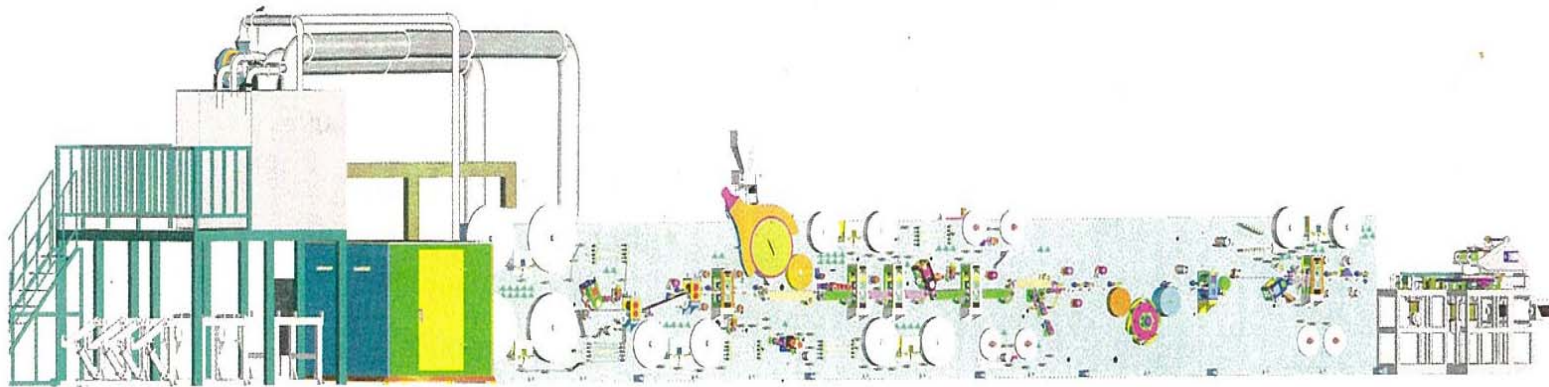
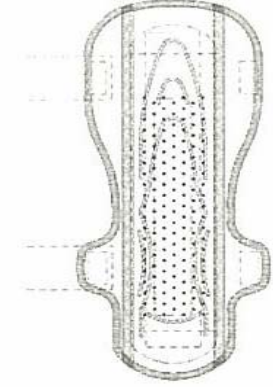
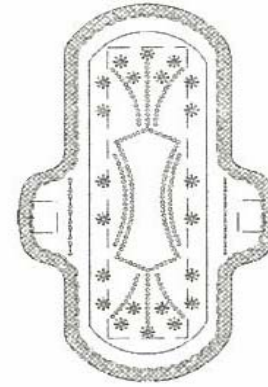
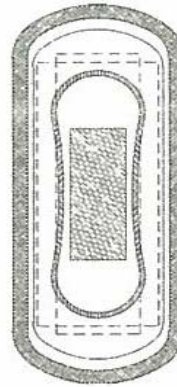
SAP

Topsheet

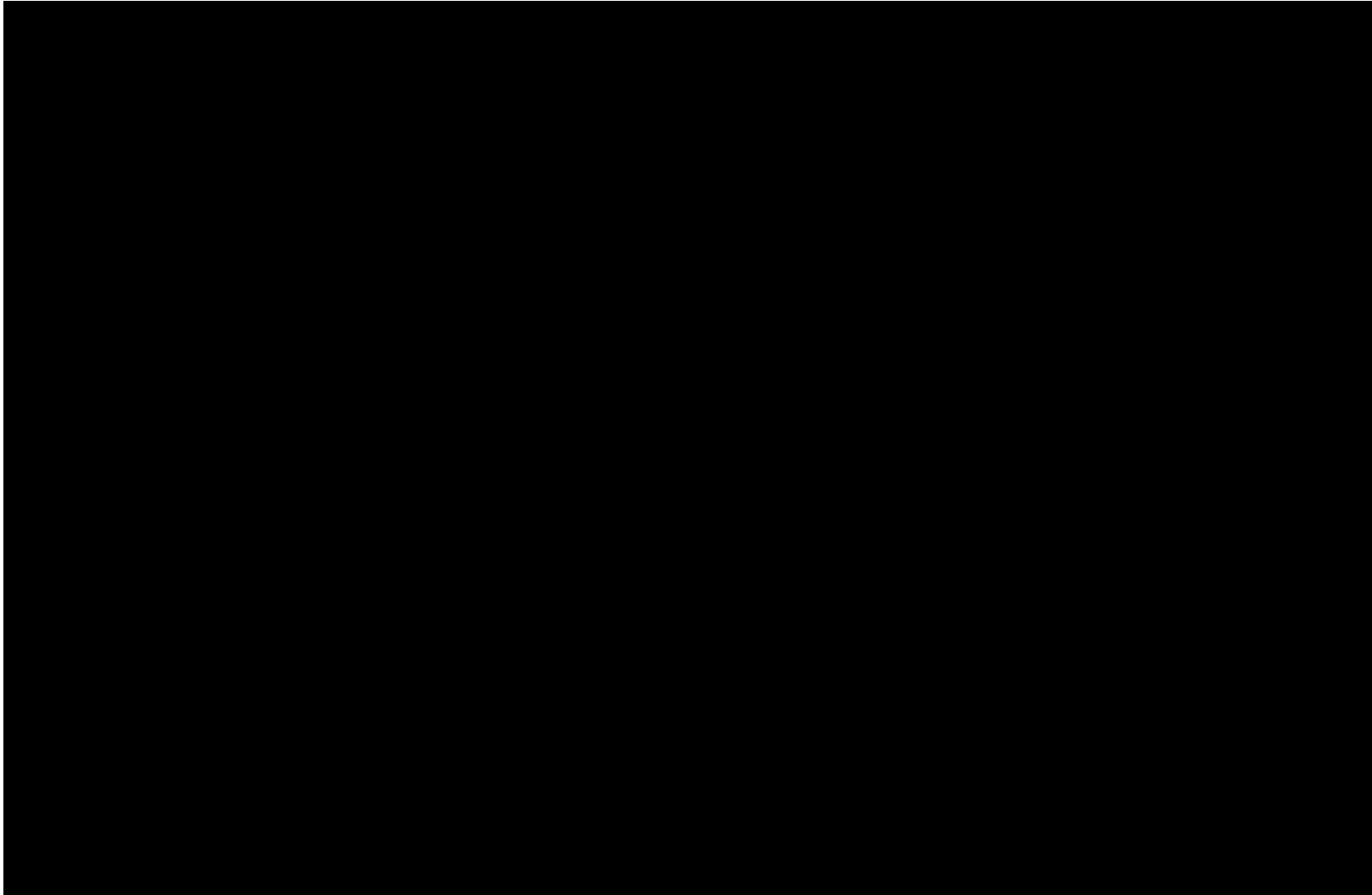
Backsheet

Back tape

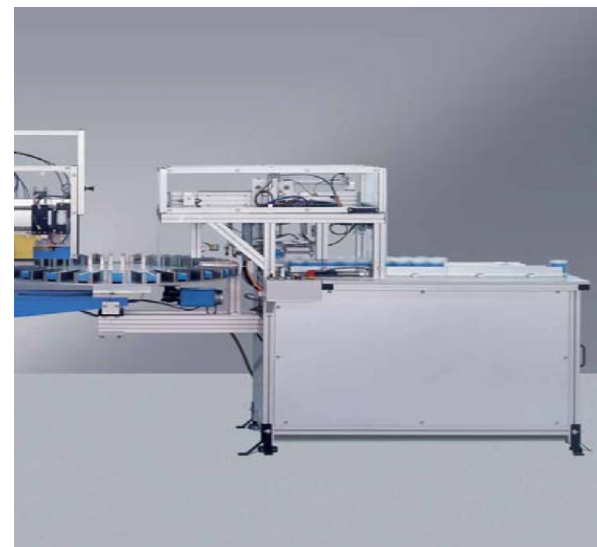
Wing tape



VIDEO OF DIAPER MACHINE



Wipes & Cotton Swabs



Cotton Pads



VIDEO OF COTTON PAD



Trützschler – Rosink Card for ear buds sliver



Advantages

- Little number of machines (Space)
- Less maintenance, less spare parts
- High efficiency in the card
- High efficiency at the ear bud machine
- Better Quality
- Less product out of range
- Less waste



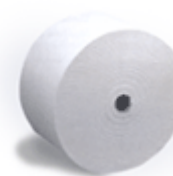
bouda



Gauze Swabs



Cotton wool balls



Gauze Roll





: Next big market for nonwovens



- **Growing income: spend more money**
- **Changing culture: IT Era.**
- **Large raw material base: cotton, polyester**
- **Development of infrastructure: roads, rails, airports**
- **Government initiatives: SEZ, Parks, TUFS**



One Window Solution



- Professional guidance
- Representation of complete value chain.
- World class principals.

WARP KNITTING

•Karl Mayer

**WEAVING
PREPERATORY**

•Karl Mayer

PROCESSING

•Fongs
•Monforts.

NON WOVENS

▪Fleissner.
▪Erko-Trutzschler.
▪Schott & Meissner.
▪Andritz Kusters.
▪Falu.
▪Bastian.



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THANK YOU