Technical Solutions for Textile Nobilitation

www.icapsira.com
**Agenda**

- **Definition of Technical Textiles**
  - Textile Finishing - Application Systems
    - Direct coatings
    - Transfer Coating
    - Lamination
    - Impregnation
  - Technical Textiles
    - Non-Wovens, Waddings and Glass Fibers
    - Pigment Printing
    - Flocking
    - Products
  - Synthetic Leather
    - Application Fields
    - Solvent based PUs (products)
  - Plastisols (PVC Dispersion)
    - Application Markets
    - Application Systems
Definition of Technical Textiles

- A Technical Textile is a textile product manufactured where “functionality” is the primary criterion.

- Technical textiles can be grouped into two macro areas:
  - Wovens
  - Non Wovens

- Technical textiles include a vast array of industries such as:
  - Textiles for automotive applications
  - Medical textiles
  - Geotextiles
  - Agro-textiles
  - Protective clothing

- At the present the importance of technical textile materials is increasing to accommodate multiple specific functional requirements.
  - Demand of specific specialties, and continuous innovation is increasing day by day
Agenda

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**Textile Finishing - Application Systems**
- *Direct coatings*
- *Transfer Coating*
- *Lamination*
- *Impregnation*

- Technical Textiles
  - Non-Woven, Waddings and Glass Fibers
  - Pigment Printing
  - Flocking
  - Products

- Synthetic Leather
  - Application Fields
  - Solvent based PUs (products)

- Plastisols (PVC Dispersion)
  - Application Markets
  - Application Systems
Most Commonly Used Product Families

- Acrylic and Urethane Polymers
- Pigment Pastes
Textile Finishing - Application Systems

Impregnation
- Foulard

Dispersions
ACRILEM® IDROCAP®
Solvent Based PUs
ICAFLEX®

Lamination
-Wet & Dry

Direct Coating
- Knife on air coating
- Knife on cylinder
- Coating
- Engraved cylinder
- Stork screen

Transfer Coating
- Knife on cylinder coating
Textile Finishing - Direct Coating

Vertical & Rolling Blind

Sportswear Casualwear
- Skiwear
- Mountain wear
- Trousers
- Fashion jacket
- Raincoat

Black Out Curtains

Dispersions
ACRILEM ®, IDROCAP ®
Solvent Based PUs
ICAFLEX ®

Sport Tech Fabrics
- Shoes
- Parachute
- Balloon
- Sail (spinnaker)
- Tents

Sun Protection Fabrics
- Adverting umbrella
- House exterior curtain
- Boat curtain

Home Textile
- Tablecloth
- Upholstery
Textile Finishing - Transfer Coating

**Sportswear**
- Blouses
- Shirts
- Skirts
- Shorts

**Military**
- Army Wear & Supply
- Backpack
- Camp tents

**Mattress Protection**
- Hospital
- Community
- Private

**Workwear, Protective wear**
- High tech
- Hygiene textile
- Flame retardant

**Dispersions**
- ACRILEM®, IDROCAP®
- Solvent Based PUs
- ICAFLEX®
Textile Finishing - Lamination

Textile / Textile
- Interlining
- Shoes
- Vertical Curtains

Textile / Plastics
- Tablecloth
- Graphic art
- Sound barrier
- Insulation

Textile / Membranes & Films
- Sportswear,
- Shoes

Dispersions
ACRILEM®, IDROCAP®
Solvent Based PU
ICAFLEX®
Textile Finishing - Impregnation

**Waterproofing**
- Woven
- Non-Woven

**Touch Modification**
- Woven
- Non-Woven

- **Dispersions**
  - ACRILEM®, IDROCAP®

- **Auxiliaries**
  - ICAPSIL®

- **Hardening**
  - Wadding
  - Abrasive pad
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- **Technical Textiles**
  - **Non-Wovens Requirements**
  - **Non-Wovens, Waddings and Glass Fibers**
  - **Pigment Printing**
  - **Flocking**
  - **Products**
    - Synthetic Leather
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## Technical Textiles

### NON- WOVENS Requirements

#### GENERAL
- High (dry&wet) strength
- Hydrophobicity
- Hardness => Resilience
- Flame Retardancy
- High Temperature performances
- Thermo-formable
- Acid / Lead resistance

#### LIGHT
- Soft hand
- High (dry, wet & solvents) resistance
- No skin irritation
- Hydrophobic or hydrophilic properties
- Barrier or adsorption performances
- Low yellowing tendency

#### WADDINGS
- Good fiber bonding
- Hardness / softness
- Flame retardancy
- Dry cleaning resistance

#### FIBER GLASS
- Good adhesion to glass
- Hardness => resilience
- Flame retardancy
- Compatibility with polymers ( PA; PP; PE; PVC)
- Thermal stability
- Alkali resistance
Technical Textiles

**Batteries**
- Battery Separators

**Shoes**
- Shoes Toepuff & Counter

**Wallcovering**
- Coating

**Non-Wovens**

**Filtration**
- Liquid
- Air

**Roofing / Thermal-Sound Insulation**
- Bituminous membranes
- High diffusion Membranes,
- Sound absorber
Technical Textiles

Hygiene
- Sanitary Napkins
- Coverstock
- Adult incontinence
- Wet/baby wipes

Interlinings
- Sportswear
- Shoes

Non-Wovens: “Light Weight”

Medical / Cosmetic
- Sterile Disposal
- Medical Wipes
- Depilatory Stripes
- Face masks

Household
- Cleaning Wipes,
  - Tablecloths
Technical Textiles

**Garments**
- Shoulder Pads
- Jacket Waddings

**Filtration**
- Fumehood Filters
- Air condition

**Non-Wovens: Waddings**

**Furnishing / Bedding**
- Upholstery
- Cushion

**Household**
- Abrasive Pad
- Antislip finishing
Technical Textiles

Liquid / air filtration
- Industrial filters
- Air condition

Geotextile / reinforcing
- Mesh
- Electric Cables

Non-Wovens: Glass fibers

Roofing / Thermal Insulation / Sound Proofing
- Bituminous
- Membranes
- Mesh
Technical Textiles

Garments
- Fabrics
- Knitwear

Home Textile
- Bedsheets
- Bedspread
- Tablecloths
- Curtains

Pigment Printing

Requirements
- Color yield
- Washing resistance
- Dry / Wet Rubbing Fastness
- Printability
- Viscosity stability
- Screen cleaning
Technical Textiles

Garment
- Fabrics
- Knitwear,
- Underwear

Upholstery
- Automotive (Aftermarket/Dashboards)
- Sofas

Requirements
- Good adhesion on the fibers
- Binding properties for PA, PES, VI
- Washing fastness
- Dry cleaning resistance
- Abrasion resistance
- Softness

Flocking

Plastics
- Jewelry
- Cosmetic bags
- PS articles
# Textile Finishing Products

**ACRYLICS**

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  • Pigment Printing
  • Flocking
  • Products

• **Synthetic Leather**
  • **Application Fields**
  • **Solvent based PU (products)**

  • Plastisols (PVC Dispersion)
    • Application Markets
    • Application Systems
**Synthetic Leather – Application Markets**

- **Shoes**
- **Automotives**
- **Bags, Suitcases**
- **Upholstery**
- **Garments**

**Technology 1 _ Coagulation_**: Impregnation by foulard or Knife Coating of a solution of PU in solvent. Coagulation of PU on solution containing water/DMF.

**Technology 2 _ Transfer Coating_**: Knife Coating on paper release of multiple layer of (usually) solvent based PU. Transfer from paper to fabric through wet or dry lamination.
Synthetic Leather - Solvent Based PU

Requirements
- Water & Solvent resistance
- Hydrolysis resistance
- Abrasion resistance
- Flexion resistance
- UV resistance

Technology 2:
(Transfer Coating)

PU solutions
- Icaflex® series

Products

Solvent-based Pigment pastes
- Flexitint® series

Auxiliaries
- Icaplink ® Series
- Icapsil® Series

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Special Applications

Heat Gellable PVC Dispersions
Plastisol® – Application Markets

Antislip for carpets

FOAM (Direct Coating)

Antislip for work gloves

Inserts for clothing, Labels
Plastisol® – Application Systems

**Immersion**
- Handle coating
- Metal and plastic Coating

**Spray**
- Difficult surfaces

**Direct coating**
- Synthetic leather
- Mattress protection
- Trucks and gazebo tarpaulins
- Table cloth
Thanks

For listening