

# Coated and Laminated Fabrics

Putting the industry in perspective

**Coating and laminating is done and  
is involved in many industries  
Paper, paint, packaging, textiles --  
among others**

**Our concern is**

***TEXTILE***

**Coating and Laminating**

Coating and laminating are textile finishing processes designed to add or improve function and to add value to a material and/or to create a material with specific properties.

**Coating:** Polymer or elastomer, usually in viscous form, is applied directly onto the fabric and cured. A variety of techniques are used. A bond-coat (adhesive) may or may not be used.

**Laminating:** A pre-made or extruded film is bonded onto the substrate, generally with thermal or adhesive bonding. Curing is generally not required.

**Coating and laminating can involve  
virtually every textile form:**

**Fibers, Yarns, Fabrics** (woven, knit or nonwoven)

**And many polymers/elastomers:**

Rubbers of all types (natural and synthetic),  
acrylic, vinyl, urethane, silicone, PTFE ....  
the list goes on and on.

# Coating and laminating:

Can be done for *aesthetics* or for *function*

May be *disposable* (limited use) or *durable*

# Combinations of polymer and substrate are virtually endless

In *theory*, combinations are chosen for specific properties necessary to “do the job.”

In *practice*, combinations are chosen most often because they are *available, inexpensive,* or simply *convenient*

## Many techniques are used:

- Yarn coating
- Spread coating - many variants
- Dipping/Impregnating
- Calendering
- Extrusion coating/laminating
- Film to substrate bonding
- Combinations



Coated and laminated textiles may be seen or unseen, decorative or functional, critical or an enhancement, simple or sophisticated, high volume or specialized, inexpensive or costly.

C/L systems and materials are versatile

*C/L fabrics are used virtually everywhere*

**The market is vast and fragmented**

**Making accurate counting extremely difficult**

# INFORMATION!

Everyone wants finite information –  
*numbers!*

How big?

How many pounds?

How many yards?

Who does what/how much?

Where/what are the markets?

Which markets are growing/declining?

<b>Application</b>	<b>1995</b>	<b>1998 ESTIMATE</b>	<b>2005</b>	<b>%CAGR '95-'05</b>	<b>\$ Value 2005</b>
Agricultural	741	817	1021	3.3%	4944
Construction	849	958	1266	4.1%	4316
Clothing/Shoes - Technical Components	647	697	824	2.5%	7642
Geotextiles	251	322	574	8.6%	2656
Home Furnishing - Technical Components	1439	1647	2259	4.6%	9678
Industrial Applications	1523	1733	2344	4.4%	11556
Medical	1177	1301	1652	3.4%	9526
Transportation	1918	2071	2483	2.6%	14365
Sport/Leisure	237	275	390	5.1%	2505
Packaging	423	483	658	4.5%	2915
Protective	117	141	215	6.3%	2227
<b>Totals*</b>	<b>9321 t</b>	<b>10445 t</b>	<b>13688 t</b>	<b>3.9%</b>	<b>\$ 72,330</b>
<i>Environmental (Crosses several areas)</i>	<i>167</i>	<i>200</i>	<i>305</i>	<i>6.2%</i>	<i>1609</i>

Source: David Rigby Associates, Manchester, UK/Messe Frankfurt, Frankfurt, Germany, 1997/ita estimates

NOTE: 1995 \$ volume was \$49,963 million. \* Totals slightly off due to rounding

**Table - 1**  
**Textile volume (tons) and growth by application 1995-2005**  
**and Dollar value by application 2005**

**Coated and laminated fabrics are  
used in all the listed areas!**

**C/L materials cut across all  
industry segments!**

## Agriculture

## Construction

## Clothing

**Bulk containers**

**Fencing**

**Seed/crop covers**

**Bags**

**Shade materials**

**Irrigation systems**

**Pond liners**

**Irrigation**

**Hoses**

**Safety fencing**

**Wind covers**

**Concrete curing**

**Safety vests**

**Hoses**

**Conveyer Belting**

**Truck covers**

**Drainage ditches**

**Substrate preparation**

**Architectural structures**

**Shoe uppers and linings**

**Artificial leather/bags/belts**

**Rainwear**

**Garment linings**

**Backing/stiffeners**

**Water/stain repellants**

**Combining different materials**

**Gloves**

**Hats**

## Geotextiles

## Home Furnishings

## Industrial

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**Settling pond liners**

**Upholstery**

**Conveyor belts**

**Irrigation liners**

**Trim**

**Filtration**

**Landfill liners & covers**

**Carpet backing**

**Barrier materials**

**Soil stabilizers**

**Drapery backing**

**Field covers**

**Erosion barriers**

**Bedding**

**Abrasive backing**

**Artificial leather**

**Mechanical rubber goods**

## Medical

## Transportation

## Sport/Leisure

**Barrier materials**

**Implants**

**Bandages**

**Prosthetic devices**

**Gloves**

**Incontinence materials**

**Upholstery**

**Body bags**

**Hygiene products**

**Seating/Trim for  
automotive, trucks,  
aircraft, buses**

**Hoses/Belts**

**Tires**

**Headlining**

**Seating**

**Carpeting**

**Airbags**

**Truck covers**

**Athletic shoes**

**Artificial leather/bags/belts**

**Rainwear**

**Backpacks**

**Tents**

**Exercise mats**

**Exercise equipment**

**Balls**

**Seating**

**Field Covers**



## Packaging

## Protective

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**Bulk containers**

**Gloves**

**House Wrap**

**Cut/slash resistant materials**

**Lumber Wrap**

**Aprons**

**Gas holding**

**Clean room**

**Barrier packaging**

**Chemical/haz-mat suits**

**Liquid bulk storage/hauling**

**Footwear**

**Waterproof materials**

**Space suits**

# Coating and laminating:

Can be done for *aesthetics* or for *function*

May be *disposable* (limited use) or *durable*

<b>Textile Form</b>	<b>1995</b>	<b>1998 ESTIMATE</b>	<b>2005</b>	<b>%CAGR '95-'05</b>	<b>\$ Value 2005</b>
<b>Yarns/Fibers</b>	<b>9321</b>	<b>10445</b>	<b>13688</b>	<b>3.9%</b>	<b>37593</b>
<b>Fabrics</b>	<b>3406</b>	<b>3613</b>	<b>4096</b>	<b>1.9%</b>	<b>29865</b>
<b>Nonwovens</b>	<b>2506</b>	<b>2950</b>	<b>4300</b>	<b>5.5%</b>	<b>19250</b>
<b>Composites</b>	<b>1492</b>	<b>1757</b>	<b>2581</b>	<b>5.6%</b>	<b>9156</b>
<b>Other Textiles</b>	<b>1917</b>	<b>2125</b>	<b>2711</b>	<b>3.5%</b>	<b>14058</b>
<b>Totals</b>	<b>9321 t</b>	<b>10445 t</b>	<b>13688 t</b>	<b>3.9%</b>	<b>\$ 72,330</b>

*Source: David Rigby Associates, Manchester, UK/Messe Frankfurt, Frankfurt, Germany, 1997/ita estimates*

**Table - 2**  
**Textile volume (tons) and growth by product type 1995-2005**  
**and Dollar value by product type for 2005**

Region	1995	1998 ESTIMATE	2005	%CAGR '95-'05	\$ Value 2005
W. Europe	2367	2571	3111	2.8%	15733
E. Europe	296	359	563	6.6%	3261
N. America	3057	3292	3886	2.4%	18923
S. America	280	318	428	4.3%	2271
<b>Asia</b>	<b>2696</b>	<b>3147*</b>	<b>4510</b>	<b>5.3%</b>	<b>25866</b>
Australasia	120	136	179	4.1%	904
Rest of World	505	622	1011	7.2%	5371
<b>Totals</b>	<b>9321 t</b>	<b>10445 t</b>	<b>13688 t</b>	<b>3.9%</b>	<b>\$72,330</b>

Source: David Rigby Associates, Manchester, UK/Messe Frankfurt, Frankfurt, Germany, 1997/ita estimates

< Takes into account significant downturn in Asian Market 1998

**Table - 3**  
**Textile volume (tons) and growth by region 1995-2005**  
**and Dollar value by region 2005**

<b>Category</b>	<b>1998 ESTIMATE</b>	<b>1996</b>	<b>1992</b>	<b>Growth 1992-1996</b>
<b>Coated Fabrics, not rubberized</b>	<b>2133</b>	<b>1,845.2</b>	<b>1480.9</b>	<b>24.5%</b>
Vinyl Coated, including expanded vinyl coated	918	767.3	614.1	25%
Other c/l fabrics and coated yarns	1083	968.4	776.1	25%
Coated fabrics, not rubberized, n.s.k.*	132	109.6	90.1	22%

*n.s.k. – not specified by kind*

*Source: Bureau of Census, Annual Survey of Manufacturers, 1996/ita estimates*

**Table - 4**  
**Value (\$millions) of Shipments for SIC 2295 – Coated Fabrics, not rubberized**  
**Dollar value/growth 1992-1996**

<b>Item</b>	<b>1999 ESTIMATE</b>	<b>Annual Growth Rate '03/'98</b>
<b>Coated Fabrics Demand</b>	<b>540</b>	<b>3.9%</b>
Motor Vehicles	138	4.0
Non-auto Transportation	69	4.0
Furniture	91	3.0
Industrial	52	1.9
Wallcoverings	42	1.9
Protective Clothing	46	5.6
Book Coverings	28	1.9
Awnings, Tents, Other	74	4.8

*Source: Adapted from a study by The Freedonia Group, Inc., (Cleveland, OH)/ita estimates*

**Table - 5**  
**Coated Fabrics Demand by Market – 1999 Estimates & AGR**  
**(million square yards)**

# Trends

## From the Freedonia Group Report

- ◆ The market demand will grow at AGR 3.9% thru 2003
- ◆ Demand estimated at 635 msy in 2003 with value of \$2.9B
- ◆ Growth driven by automotive and transportation, protective clothing, awnings/canopies (including signage), and small volume niche markets
- ◆ Deceleration of growth will occur in all markets thru 2003
- ◆ Slower than average growth will occur in furniture, industrial, commercial tents and book coverings.
- ◆ Average prices will decline - average price \$4.54 in 2003
- ◆ Treated, non-coated materials may be good alternates

# Coating and Laminating Market Trends:

- The industry is *global* - and becoming more so
- *Environmental* issues will have more impact
- *Recycling* a major environmental issue
- *New techniques and materials* will evolve to help resolve problems and create better products
- *Verticalization* will increase
- *Alliances* and partnerships will be more common
- Increased use of *nonwovens*
- Greater use of *composites*



The coating and laminating industry is large,  
fragmented....and exciting

The versatility of the processes allow  
creative problem solving

There is the need for quality product development and for research and development of new products and processes

*Innovation and creativity are  
the keys to the future!*



**Well, I see my time is about up!**

# Thank you

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