

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?

Application	1995	1998 ESTIMATE	2005	%CAGR '95-'05	\$ Value 2005
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
Totals*	9321 t	10445 t	13688 t	3.9%	\$ 72,330
<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

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

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*

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

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
Asia	2696	3147*	4510	5.3%	25866
Australasia	120	136	179	4.1%	904
Rest of World	505	622	1011	7.2%	5371
Totals	9321 t	10445 t	13688 t	3.9%	\$72,330

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

Category	1998 ESTIMATE	1996	1992	Growth 1992-1996
Coated Fabrics, not rubberized	2133	1,845.2	1480.9	24.5%
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

Item	1999 ESTIMATE	Annual Growth Rate '03/'98
Coated Fabrics Demand	540	3.9%
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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