

Textile Coating

PVC offers several advantages

Content

Textile Coating	3
Fabric Coating	7
Billboards, Tarpaulins & Tents	7
Conveyor Belts	9
Protective Clothing	9
Imprint	11

Image 1: Truck tarpaulin



Textil Coating

PVC is a versatile, economic polymer often used in Textile Coating. It can easily be compounded with other additives and has inherent fire resistance properties.

In Textile Coatings natural or synthetic fabrics are coated with one or more layers. This can be done by floating knife or rubber blanket knives. For encapsulation from both sides the fabric are dipped and then the coating will be removed by blades. The weight of coated fabrics is between 100 and 1500g/m² and depends on the sub-segment.

Image 2: Biogas plant



Textile Coating includes a wide range of possibilities. The carrier fabrics are produced from natural or synthetic materials and have open or closed structures. The coatings may be either single- or multilayer and can be coated on either one or both sides. Textile Coatings provide a range of mechanical properties depending on end use. End use applications can range from food contact to interior or exterior commercial use.

The carrier and the usage define the coating process. The process can be done by floating knife, rubber blanket knife, rotary screen or by dipping and doctoring with a blade or by calendering. The viscosity of the plastisol is very important at this point in the process. One of the objectives

is to maintain the textile feeling of the finished product. Therefore, the plastisol must not excessively penetrate the fiber. However, the viscosity must be low enough to facilitate the handling and coating of the plastisol on the fabric. Plastisol with pseudoplastic special flowing behavior is required.

The amount of filler (chalk) that can be added to the formulation depends on the function of the coated textile. Standard Stabilisers can be used in the formulations. For outdoor usage, UV Stabilisers and anti-fungal additives are recommended for outdoor usage. After coating/scraping the material is gelled in ventilated ovens.

Floating knife

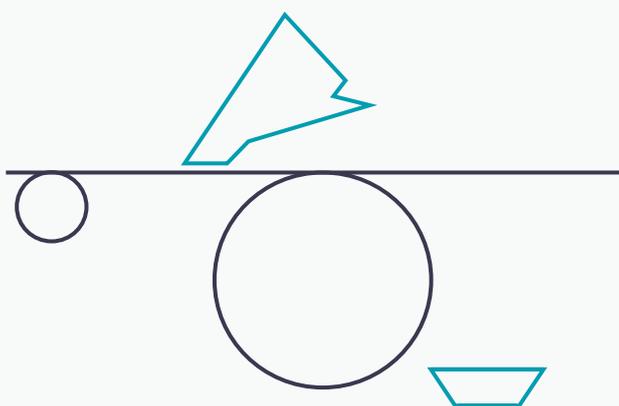


Figure 1: Floating knife

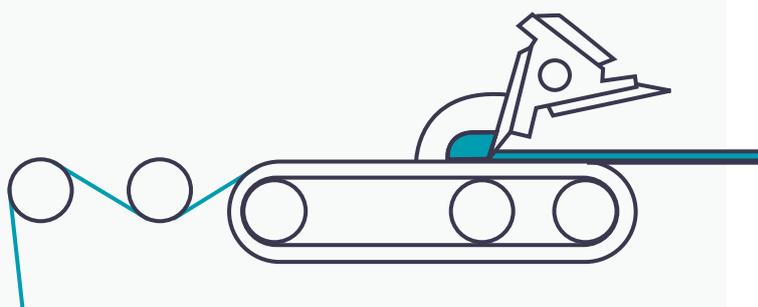


Figure 2: Rubber blanket knife

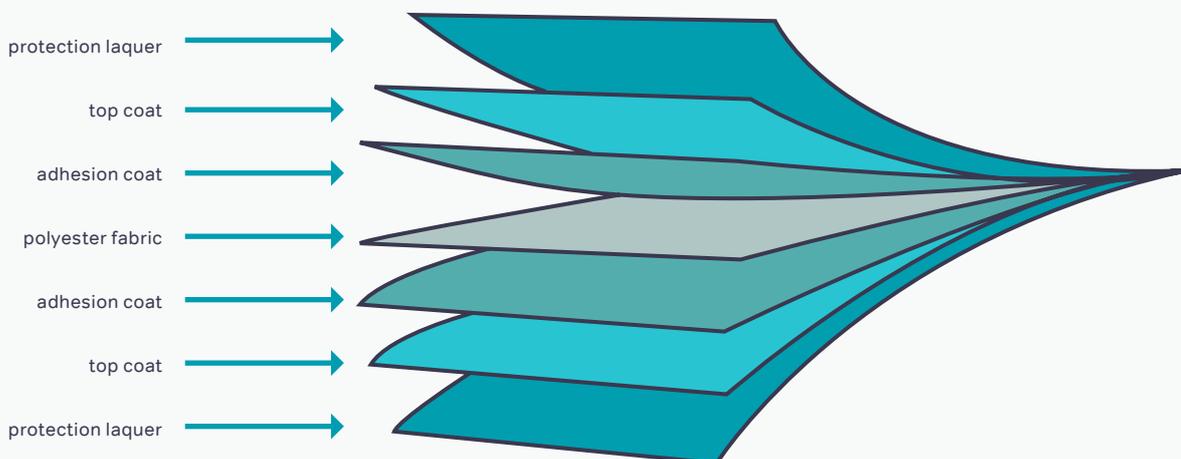


Figure 3: Structure of tarpaulin



Image 3: Truck tarpaulin

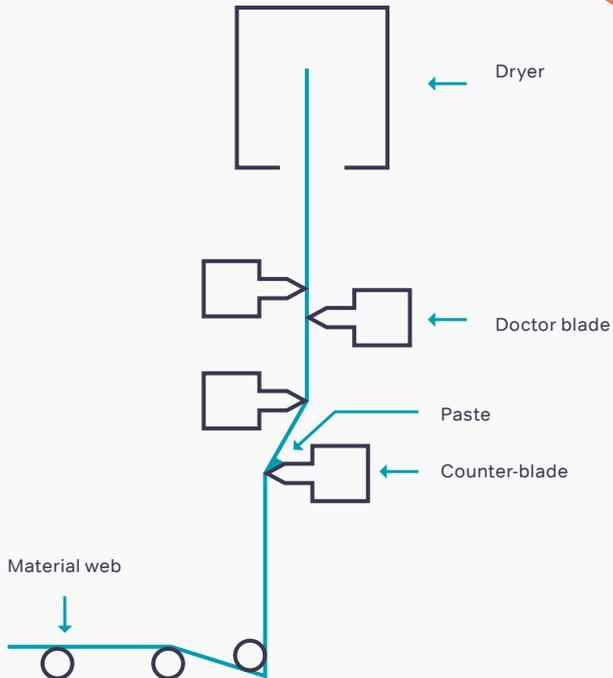


Figure 4: Double knife for vertical coating

Scheme of a tandem horizontal coater

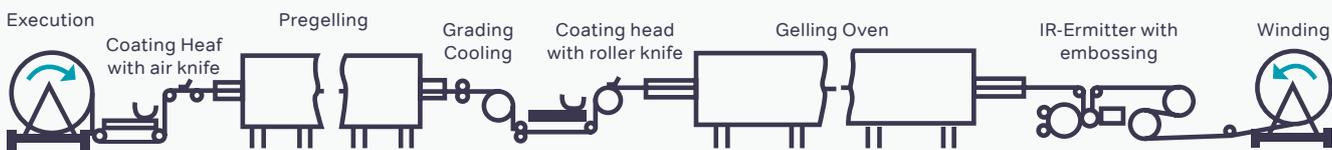


Figure 5: Scheme of a tandem horizontal coater



Image 4: Coated Fabric

Fabric Coating

PVC fabrics are valued for their toughness and superior ability to withstand distortions. Many manufacturers prefer PVC fabrics for their ease of use, versatility, waterproofness, chemical resistance, longevity, and cost-effectiveness.



Image 5: Waterproof Coated Fabric

Billboards, Tarpaulins & Tents

PVC is a common material used in billboard advertisement due to its good mechanical properties, printability and ease of manufacturing. The Tarpaulins consist of a woven mesh or scrim coated with PVC. Due to their low water absorption and good weather resistance, the products are not only suitable as truck Tarpaulins for transport but also as Billboards, advertising Tarpaulins and Tents. The structure of a billboard is as shown in [figure 3](#). Billboards and Tarpaulins are produced on synthetic fabrics. Due to the closed surface of synthetic yarns, these fabrics have to be coated first with an adhesion layer to achieve a good bond to the fabric. The top-layer must also have low water absorption, good light stability, and good welding properties. Low surface tension is a desired property of the top layer to facilitate printing with inks.



Image 6: Tents



Image 7: Billboard for commercial use



Conveyor Belts

Conveyor Belts can be seen in use at airports and industrial settings. PVC resins used in this application provide good mechanical properties, flexibility and physical and chemical resistance.

Conveyor Belts are multilayer constructions of coated materials over a synthetic fabric core. The weight of Conveyor Belts is between 700 and 1700g/m².

The formulations are dependent of the use. For example, if the Conveyor belt comes in contact with food, resins specifically approved for food contact are used.

Image 8: Conveyor Belt used in a warehouse

Image 9: Equipment for cloth preparation

Protective Clothing

PVC provides great protection against many industrial chemicals including acids and bases. Common uses include disposable splash aprons, earplugs and gloves.

Image 10: Protective rainwear



Product Code	K value	Description
Homopolymer S-PVC		
PRIMEX PVC 445	65	Good mixing process, good thermal stability, low fish eyes content
PRIMEX G 34	67	Low fish eyes content and good plasticiser adsorption
PRIMEX PVC 450	67	Low fish eyes content, good plasticiser adsorption, good mixing process and good thermal stability
PRIMEX G 30	70	Good plasticiser absorption, low fish eyes content and good powder mix time
PRIMEX G 30 HP	70	Higher plasticiser absorption, low fish eyes content and shorter powder mix time
PRIMEX P 250	70	Excellent color, Thermal stability, Plasticiser absorption and low fish eyes content
PRIMEX PVC 500	70	Higher plasticiser absorption, low fish eyes content and shorter powder mix time
PRIMEX PVC 500 F	72	Higher plasticiser absorption, low fish eyes content and shorter powder mix time
PRIMEX PVC 550	75	Low volume resistance, low fish eyes content
Homopolymer Paste-PVC		
VESTOLIT G 124 A	64	Good chemical foamability for producing medium to high density foams. Good dispersability for easier plastisol preparation
VESTOLIT P 125	66	General purpose resin, Good chemical foamability for medium to high density applications. Excellent viscosity stability
VESTOLIT E 450	67	Medium viscosity, good expansion, good pore quality in foam
VESTOLIT E 67	67	Medium viscosity, high blow ratio foams
VESTOLIT G 67 F	67	Low Viscosity, foamable with high filler level, good cell quality, color and thermal stability. Can stay in contact with concrete
VESTOLIT E 6841	68	Very fast expansion, fine foam structure and excellent color, chemically inhibitable
VESTOLIT G 68	68	Low viscosity, good air release
VESTOLIT P 124	69	General purpose resin, Good chemical foamability for medium to high density applications. Excellent viscosity stability
VESTOLIT A 67	70	High viscosity, good air release
VESTOLIT P 1353 K	70	Producing high viscosity pastes with pronounced pseudoplastic flow for compact processing and for chemical expansion
VESTOLIT B 7021 Ultra	70	Low viscosity, universal resin, low viscosity, good storage stability and low moisture absorption, excellent drum release properties
VESTOLIT E 7031	70	Distinctly pseudoplastic
VESTOLIT G 120X400	70	Good chemical foamability for producing medium to high density foams. It contains lower emulsifier level results in lower plate-out
VESTOLIT P 1430 K70 Ultra	70	Low viscosity, high gloss, excellent air release, superior transparency, good thermostability
VESTOLIT G M 100 FB	72	Good balance of fusion temperatures and film physical properties, good chemical foamability
VESTOLIT A 74 LM	74	Medium viscosity, low fogging
VESTOLIT A 74 L	74	Medium viscosity, low fogging
VESTOLIT G 121 A	74	Good chemical foamability for producing medium to high density foams. Good dispersability for easier plastisol preparation
VESTOLIT G 129X115	74	Good chemical foamability for producing medium to high density foams. Good dispersability for easier plastisol preparation
VESTOLIT G 74	74	Low viscosity, good air release, high mechanical strength
VESTOLIT G 410	75	Medium viscosity, good foaming properties, good mechanical properties, low fogging
VESTOLIT G 415	75	Low viscosity, good air release, low fogging
VESTOLIT T 440	75	Low viscosity, excellent transparency, low water absorption, good adherence to metallic surfaces, low odor, high brightness
VESTOLIT G 129	77	Good chemical foamability for producing medium to high density foams. Good dispersability for easier plastisol preparation
VESTOLIT P 121	77	General purpose resin
VESTOLIT P 123 LV	77	General purpose resin, excellent air release. Low VOC's
VESTOLIT E 8001	80	Alkali prestabilized homopolymer, very low percentage of coarse particles, mat surface finish
VESTOLIT P 1415 K80 Ultra	80	Low viscosity, excellent drum release, low gloss
Blending Resins		
VESTOLIT XG FIT 074	60	Increases physical properties up to 30% compared to traditional blending resins. Low molecular weight.
VESTOLIT XG 215	64	Low to medium molecular weight homopolymer blending resin for solid and foamed plastisol applications
VESTOLIT XG 217	67	Low to medium molecular weight homopolymer blending resin for solid and foamed plastisol applications
VESTOLIT XG FIT E-51	67	Increases physical properties up to 30% compared to traditional blending resins. Medium molecular weight

Table A: Product overview for Textile Coating - Billboards, Conveyer Belts, Fabric Coating, Protective Clothings, Tarpaulin & Tents

Locations

Vestolit Europe

Vestolit GmbH
Paul-Baumann-Str. 1
45772 Marl
Germany
T +49 2365 9549-100

Customer-Service.Germany@vestolit.com
Technical-Service.Germany@vestolit.com

Vestolit LATAM

Mexichem do Brasil
Representação Comercial Ltda.
Doutor Plácido Gomes Street, 610
Office 202
Joinville - Santa Catarina
Zip Code: 89.202-050
Brazil
T +47 3013-6480

Mexichem Resinas Colombia S.A.
Oficina de Bogotá
Autopista Sur # 71 - 75
Bogota, Colombia
T +57 (1) 782 5060

Mexichem Resinas Vinílicas S.A. de C.V.
Boulevard Manuel Ávila Camacho 2610
Torre B, Piso 12
Colonia Valle de los Pinos
Tlalnepantla de Baz, CP 54040
Mexico
T +52 5 553 66 40 00

Customer-Service.LATAM@vestolit.com
Technical-Service.LATAM@vestolit.com

Vestolit USA

Mexichem Specialty Resins, Inc.
33653 Walker Road
P.O. Box 277, Avon Lake, Ohio 44012-0277
USA
T +1 (877) 226 7355

Customer-Service.USA@vestolit.com
Technical-Service.USA@vestolit.com

Imprint

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info@vestolit.com
www.vestolit.com

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Image 8: shutterstock
Image 9: freepik
Image 10: envato

Vestolit's Application Brochures

Artificial Leather
Commercial Graphic Films
Film & Sheets
Flooring
Medical Devices
Profiles & Pipes
Sealants
Technical Coatings
Textile Coating
Wallpaper
Wire & Cables

About Orbia

Orbia is a company driven by a shared purpose: to advance life around the world. The five Orbia business groups have a collective focus on expanding access to health and wellness, reinventing the future of cities and homes, ensuring food and water security, connecting communities to information and accelerating a circular economy with basic and advanced materials, specialty products and innovative solutions.