

BE
eco

green
story

What is polyester?

Polyesters are the general name of polymers containing ester bonds (as the name suggests). We will not go into chemical details too much, but it's worth clarifying a few issues. Polyesters are synthetics - such molecules do not occur naturally, but were created thanks to the work of chemists. It is a whole group of substances that are widely used in various industries. For example, polycarbonates (which belong to polyesters) produce CDs. Polyesters accompany us as every day, they are even used to manufacture advanced tools for astronauts.

The polyester, usually met in clothing industry, is polyethylene terephthalate, often marked as PET. Sounds familiar? Yes, the same material known for foils and bottles for beverages, but also a variety of clothing fibers.

Other names under which this synthetic material operates include dacron (especially in the USA), terylene (Great Britain) and lavsan (Russia and post-Soviet countries). Sometimes these mysterious terms can be found on tags or descriptions of products on the Internet. Now you know what they mean. Further, I will focus on polyester will be used in the clothing industry.

Where did it come from?

The history of the polyester is not long - it dates back to 1930s. At that time, laboratory work was carried out on synthetic materials that could be easily used for the needs of the clothing industry. Two British chemists - James Tennant Dickson and John Rex Whinfield dealt with it. In 1941, these two gentlemen, working in Manchester, patented PET. Also, Soviet and American chemists soon created their versions of polyester.

Production

Polyester, depending on used synthesis method (there are several of them), may have different properties. It is formed from the combination of certain esters, alcohols and acids – how manufacturers often describe it. It is surprising how high they value the chemical education of their clients, right? They aim to avoid telling the simple truth that polyester is made on oil. It is safer to use abstract chemical terms, because association with stinking fuels are usually negative. After synthesis and some treatments, the polyester takes form of small flake. This solid, flowing substance is melted to retrieve fibers from its cooling streams. These are subject to stretching or other chemical treatments giving them desired look, e.g. hairy false wool or smooth and shiny imitation silk. Is the production of polyester threatening the environment? This substance is created on the basis of crude oil, which belongs to non-renewable resources, and during production, large amounts of carbon dioxide are released into the atmosphere. This is undoubtedly a threat. But there is also a recyclable polyester (known as PES), which answers the need of reusing old clothes and plastic bottles. Additionally, the amount of garbage is reduced. The rational use of polyester does not have to be a big burden for the environment, however control is crucial.



Properties:

There are many categories of polyester materials and it is really difficult to keep up, because new recipes are constantly appearing. However, we can distinguish several main features of fibers used in fashion industry. Here is a short list of pros and cons. Polyester is:

Non-hygroscopic - shows very low water absorption.

Resistant to stains - at least when it comes to water-based substances, eg.: wine, blood, tomato sauce. This feature of polyester results from the fact that it does not absorb water.

Resilient - after deformation, it extremely quickly returns to its original state. All-polyester material do not crease.

Easy to dye - polyester fiber can be given virtually any shade, even the most intense. The color will be extremely durable and dozens of washes will not change it significantly. That is why the largest companies in fashion industry, change unsold items of one collection into different colors/collections.

Very little airy - that's why it is so hot in it in the summer. As you know, polyester does not breathe and it's easy to sweat in it. A sports shirt made of this fabric will not absorb sweat (no wet back effect), it will only lead water outside.

Polyester in sport

Living actively, we can now enjoy clothes that are light as a feather, efficiently drain sweat, do not wet in the rain and maintain our thermal comfort.

Recycling

So what can you do with old rags ...

The system of possible methods of recycling textile waste, have been divided into mechanical, thermal and chemical recycling.

The most popular recycling technology is the technique of mechanical combing, delamination or grinding of waste.

Research on mechanical processes of textile recycling has shown that secondary fibers after mechanical recycling through combing have deteriorated its physical parameters - they are shortened and there is a relatively small amount of elementary fibers, at most 2-5%.

Fiber delamination and grinding are most commonly used.

Such fibers are often used as:

- upholstery fillings, after pressing and giving them shape as inserts (eg trunk boards for cars);
- silencing mats in the automotive industry.
- new fibers – in the process of remelting
- new materials: a common product obtained in the recycling process is non-woven; after using the fiber grinder and then processing obtained fibers in the needling process, we obtain a new material.

Polyester can be recycled up to 8 times.



Recycled products



Examples of recycled products:



Products marked with this symbol are fully ecological, i.e. no harmful substances are used in the whole process. Both materials and inks used in production have certificates confirming their neutral impact on the environment. One of the certificates meeting the highest ecological requirements is OEKO-TEX Standard 100. This certificate is granted only to products in which over 100 health-relevant parameters have obtained positive results. The inks used for dyeing the fabrics are based on water, paraffin and natural pigments. Thanks to such ecological ingredients, they also bear the OEKO-TEX Standard 100 certificate.

Polyester, as a synthetic fiber, is subject to 100% recycling (also the type printed using the sublimation method). The polyester recycling method consists in cutting and grinding the fabric. Next, the polyester is melted and its fibers are stretched. The material is almost 100% recycled for re-production.



Velum-Flag Premium



Velum Premium is widely used in advertising and events, especially sports-oriented. It is most often used in production of traditional, national or advertising flags. Fabric dyeing using the sublimation method makes the colors very vivid and resistant to external conditions. Depending on requirements, the fabric can be sewn into very large elements. Large-format flags in various shapes are also made of this material. The low weight of the fabric (115 g/sqm) and the flexibility of the material facilitate folding and transport. To provide safety, the material is covered with a flame-retardant coating with B1 certification.

The 115 g/sqm flag fabric is made of 100% high-quality polyester. The appropriate weave provides high durability and air permeability. The material has a class-B1 flame retardant certificate. Printed using color-sublimation technique. OEKO-TEX Standard 100- ecologically certified. Polyester used for printing (PES) is a synthetic fiber obtained from the recycling of old clothes and plastic bottles. It is a non-hygroscopic fiber (it does not absorb water). This property also makes it resistant to stains. Polyester is resilient and quickly returns to its original state after deformation- it practically does not wrinkle. The color is very durable and resistant to mechanical damage.

Change to Green

For large format printing, polyester can replace PVC-containing materials.

The advantages of polyester:

- ecological production process
- 100% recyclable
- light-weight (lower transport and assembly costs)
- flexible (smaller dimensions of packages)
- cheaper transport, due to its dimensions and weight (which in turn affects the reduction of CO₂ emissions to the atmosphere)
- ecological printing process
- slow-burning B1 (increased safety)
- washable (reusable)



Technical data sheet:

Technical data sheet:

material	PES 100%
weight	115 g/sqm
width	3,15 m
warranty	6 month
flameretardent	B1, M1

Velum-Flag Mesh



A popular solution used mainly during mass events. Flag bands are made from specially perforated polyester. The special arrangement of threads strengthens the fabric and allows to assemble it on a band with the use of perforation apertures. The flag is very light so it is possible to prepare rolls including many meters of prints. The fabric does not fray after cutting, and that is why it is possible to cut the product into proper pieces at the place of assembly. The perforated flag fabric is also often used as the base material for mast flags.

Perforated polyester fabric, 110 g/sqm, with a special reinforced braid. Possesses the B1 Flame retardancy certificate. Very resistant to weather conditions. Printed using the color-sublimation technology. The most often used finishings include reinforcing bands and grommets. It is possible to assemble it directly using cable ties pulled through the fabric's apertures. An inexpensive and easy assembly process. Cutting the fabric with scissors does not cause it to fray, thanks to which the advertisements may be cut to fit at the place of assembly.

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- slow-burning B1 (increased safety)
- washable (reusable)



Technical data sheet:

Technical data sheet:

material	PES 100%
weight	110 g/sqm
width	3 m
warranty	6 month
flameretardent	B1, M1

Velum Tex Premium



A light and ecologic polyester fabric dedicated for sublimation printing. A fabric with limited light permeability. Fire retardant fabric (B1, M1). Perfect colors, ideal to be seen up close, easy to assemble. An elegant form of advertising, associated with lightness and ecology. Used most often for decorating stores, fairs, expositions, interior design, and decorations. The Velum Tex material with a different finishing may also be used as a textile banner, hanger, stage design background, curtains, shades, etc. During sports events it often substitutes advertising banners including PVC.

The 210 g/sqm flag fabric is made of 100% high-quality polyester. The appropriate weave provides high durability and air permeability. The material has a class-B1 flame retardant certificate. Printed using color-sublimation technique. OEKO-TEX Standard 100- ecologically certified. Polyester used for printing (PES) is a synthetic fiber obtained from the recycling of old clothes and plastic bottles. It is a non-hygroscopic fiber (it does not absorb water). This property also makes it resistant to stains. Polyester is resilient and quickly returns to its original state after deformation- it practically does not wrinkle. The color is very durable and resistant to mechanical damage.

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- ecological printing process
- slow-burning B1, M1 (increased safety)
- washable (reusable)



Technical data sheet:

material	PES 100%
weight	210 g/sqm
width	3,15 m
warranty	6 month
flameretardent	B1, M1

Velum-Tex



An economical and 100% environmentally friendly product. An alternative for small-size banners and meshes. Dedicated for short-term expositions. The base material is pure, non-woven polyester. It is entirely recyclable. Printed in the process of colorful sublimation, with ecological, water inks, certified by OEKO-TEX 100. Excellent, vivid colors. A very strong structure of the fabric. Resistant to tearing, and the grommets are installed directly in the fabric, without any unnecessary finishing elements. An environmentally friendly and inexpensive alternative for advertising bands, stadium borders, and long advertising sections.

The base material is pure, 150 g/sqm non-woven polyester. It is entirely recyclable. Printed in the process of colorful sublimation, with ecological, water-based inks. Due to the structure and type of printing, it is extremely resistant to mechanical damage.

Change to Green

For large format printing, polyester can replace PVC-containing materials.

The advantages of polyester:

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- 100% recyclable
- light-weight (lower transport and assembly costs)
- flexible (smaller dimensions of packages)
- cheaper transport, due to its dimensions and weight (which in turn affects the reduction of CO₂ emissions to the atmosphere)
- ecological printing process
- slow-burning M1 (special order)
- washable (reusable)



Technical data sheet:

material	PES 100%
weight	150 g/sqm
width	3 m
warranty	6 month
flameretardent	M1 (special order)

Velum-Tex Blackline



A fabric printed in the process of colorful sublimation, blocking 100% of light. The other side is covered with a layer of black polyurethane. Its main advantage is blocking light that comes through the fabric. May be used as classic blackouts, screens, or elements of commercial space constructions. In winter sports it is used for example to construct start/finish positions. Perfect for indoor and outdoor applications.

A polyester fabric, 220 g/sqm, with a layer of black polyurethane on the underside. Blocks 100% of light. Dye-sublimation printing with a maximum width of 310 cm. Flame retardant (B1 certificate).



Technical data sheet:

material	PES 100%
weight	235 g/sqm
width	3 m
warranty	6 month
flameretardent	B1

NeoMesh



A revolutionary material in the industry of large scale printing. It is a textile mesh made entirely out of polyester (does not include PVC) to be used outdoors instead of traditional PVC meshes. The main advantage of this product consists in the ecological aspect. Both the sole fabric as well as the printing method are 100% environmentally friendly. The meshes may be sewn or welded just like normal PVC meshes, but they are lighter, more flexible, and thus cheaper to transport and assemble. May be fully recycled.

Polyester mesh 230 g/sqm. The printing is very resistant to mechanical damages, scratches, or abrasions. May be welded or sewn. We possess our own patented system for finishing this material. The fabric possesses a class-B1 flame retardancy certificate.

Change to Green

For large format printing, polyester can replace PVC-containing materials.

The advantages of polyester:

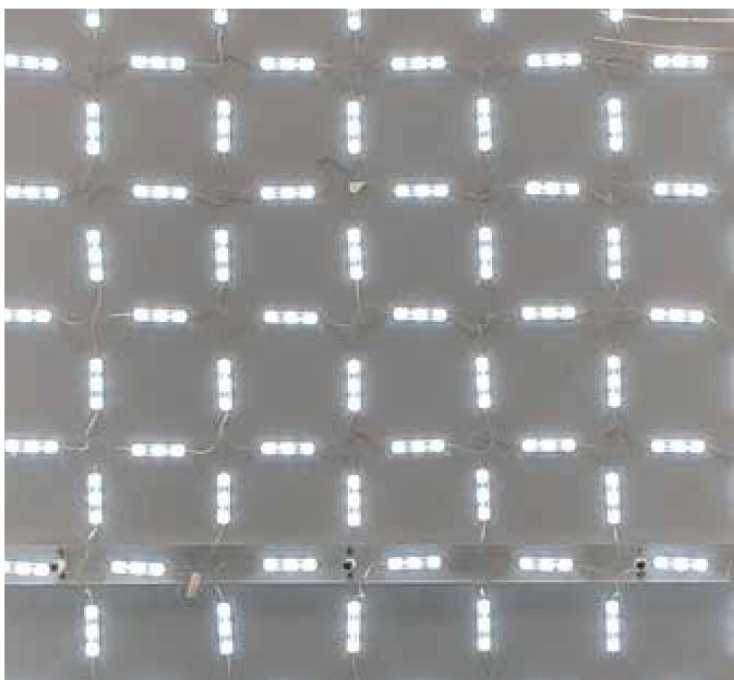
- ecological production process
- 100% recyclable
- light-weight (lower transport and assembly costs)
- flexible (smaller dimensions of packages)
- cheaper transport, due to its dimensions and weight (which in turn affects the reduction of CO₂ emissions to the atmosphere)
- ecological printing process
- slow-burning B1 (increased safety)
- washable (reusable)



Technical data sheet:

material	PES 100%
weight	230 g/sqm
width	3,2 m
warranty	6 month
flameretardent	B1

Velum-Tex Samba



OnFrame

An aluminum profile for constructing textile exposition tension frames. The longest elements are available at 6 m. With the use of a connector system it is possible to connect frames, creating larger and spatially more complex constructions. A popular system for fair and advertising constructions. It may be equipped with LED lighting.



OnFrame Basic due to the cross section of its profile it is dedicated for constructing wall mounted frames (screwed directly to the wall). Profiles prepared directly for assembly (cut to measure along with assembly elements).



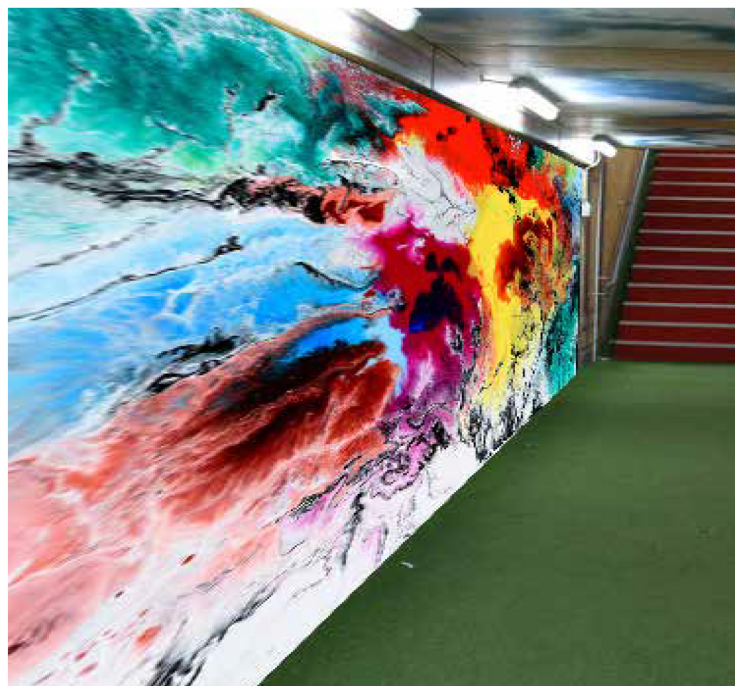
OnFrame Classic the reinforced cross section of the profile is properly strengthened and may be used to construct free-standing or hanging frames. In case of larger formats, bars reinforcing the structure must be used.



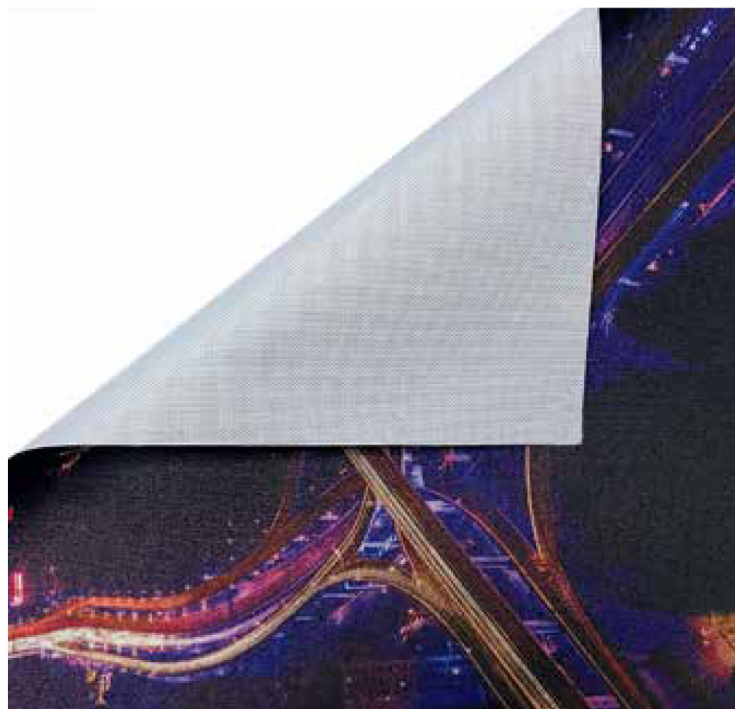
OnFrame Double an aluminum profile for constructing double-sided tension frames for textile expositions. The reinforced cross section of the profile including an assembly aperture is dedicated for free-standing double-sided frames.



Silicone rubber a silicone profile sewn to the edge of the printed fabric which constitutes a mounting and tension element for the ready print on the aluminum frame.



This fabric, printed using the latex technology, provides the possibility to fully present your products. Its main advantage is achieving a very deep black color, even after illumination. Surface printing allows to print a layer of latex which is flexible and at the same time thick enough to completely block the light. The fabric is available in a width of up to 5 m, and is resistant to weather conditions. Perfect illuminated advertisements for the OnFrame assembly system.



Technical data sheet:

material	PES 100%
weight	195 g/sqm
width	5 m
warranty	6 month
flameretardent	B1

Fototapete selbstklebend Textil



Safe and eco-friendly material for a fast decoration of interiors. Non-invasive change of decor. One solution for multiple surfaces. With Fototapete you can change the decor without tampering with the walls (no glue marks), reusable.

The selbstklebend technology lets you: apply the product on diverse surfaces (metal, glass, wood, stone, plastic, furniture board, various types of walls etc.). Apply and remove it many times Fototapete is ready for use. No additional tools required for installation Free of harmful substances. Light, durable and resistant to tear and wear.

The 210 g/sqm flag fabric is made of 100% high-quality polyester with special Fototapete glue. The appropriate weave provides high durability and air permeability. Printed using color-sublimation technique. OEKO-TEX Standard 100 - ecologically certified. Polyester used for printing (PES) is a synthetic fiber obtained from the recycling of old clothes and plastic bottles. It is a non-hygroscopic fiber (it does not absorb water). This property also makes it resistant to stains. Polyester is resilient and quickly returns to its original state after deformation- it practically does not wrinkle. The color is very durable and resistant to mechanical damage.

Change to Green

Fototapete technology enables:

- Fast application on a variety of surfaces.
- Multiple applications and removals.
- Printing of any design.
- Applying the product on metal, glass, wood, stone, plastic, furniture board, various types of walls etc.

Fototapete:

- Product ready for immediate use.
- No additional tools are required for installation.
- Product free of harmful substances.
- Light, durable and resistant to tearing and wear.



Technical data sheet:

weight:	210 g/m ²
exposure time:	up to 12 months (indoor)
material:	100% polyester
certificate:	OEKO- TEX Standard 100 (fabric and inks)
printing type:	sublimation
size:	up to 315 cm