TRANSFER EXPRESS®

THE HEAT PRINTER'S ULTIMATE GUIDE TO FABRIC TYPES

TABLE OF CONTENTS

APPAREL & FABRIC TYPES

1. ACRYLIC, BATTING, BURLAP, BAMBOO
2. CANVAS, CATIONIC DYEABLE POLYESTER CHIFFON, COCONA®
3. CREPE, CORDURA®, ELASTANE, DAZZLE®
4. ELASPAN®, FELT, FLEECE, FRENCH TERRY
5. HESSIAN, GORE-TEX™, GUNNY CLOTH, JACQUARD
6. JUTE, LUREX® LINEN, LYCRA®
7. MODAL, NYLON, LYOCELL, NOMEX
8. NEOPRENE, PELLON®, PIQUE, OXFORD
9. POLYESTER, POLYAMIDE, POLYETHYLENE, POLYURETHANE, POLYPROPYLENE
10. POPLIN, RAYON, RAMIE, RIPSTOP
11. SILK, SATEEN, SATIN, SPANDEX
12. SUPPLEX®, TARPAULIN, TAFFETA, TENCEL™
13. TERRY CLOTH, VELVET, TWILL, VINYL
14. VISCOSE, WOOL

APPAREL FEATURES & TERMINOLOGY

15. DENIER, DYE MIGRATION, GSM, MICROFIBER, MOISTURE WICKING, PILE, PVC COATING, MESH
16. NON-WOVEN, PERFORMANCE WEAR, SUBLIMATION, TRI-BLEND, NATURAL VS SYNTHETIC

PREFERRED TRANSFERS

17-18. FABRIC TYPES & PREFERRED TRANSFER EXPRESS PRODUCTS CHART

ABOUT THE AUTHOR

ANDY CURTISS

Andy Curtiss began his career with STAHLS' Transfer Express® in 2002 as a "Dealer Services Representative" in their 11-person call center. Over the course of the next 17 years Andy would go on to hold many positions within the call center from Training Coordinator, to Service Recovery Manager, to Department Manager, growing the call center to upwards of 50 people. In 2016 he was given the opportunity to become Production Operations Manager for the 150+ person production facility, spanning 3 shifts. After 2 years of this adventure, he returned to the front of the building again as Senior Manager of Dealer Services and Graphic Design. In his free time Andy serves on the board for the James A. Garfield Alliance, supporting the James A. Garfield National Historic Site as a photographer, social media specialist, and guest lecturer.

INTRODUCTION

In the growing world of apparel, the variety of fabrics is outstanding. While you always have standards like cotton and polyester, new materials are created and popularized regularly. It's important to stay informed on the materials you work with. This guide will layout all the fabrics and materials you will come in contact with and what transfers can be applied to them. Remember it's important to test all fabric and heat transfer types so you're sure to get a reliable, scorch-free final product.

ABOUT TRANSFER EXPRESS®

Transfer Express® is the leading manufacturer of custom screen printed, digital and rhinestone heat transfers. We also carry heat applied names and numbers, wholesale apparel and a full line of heat presses. You can send us your own artwork or use our thousands of layouts and clip art in our free online designer Easy View®.

ACRYLIC

A synthetic fiber which is meant to mimic more expensive, natural fabrics like wool or cashmere. While acrylic can sustain multiple washings, it is otherwise seen as cheap due to its habit of fraying and pilling easily. Apparel produced include socks, gloves, hats, and sweaters. In the manufacturing process, heat is used to set the shape of the acrylic fibers. This means heating it to high temps can cause the fabric to warp permanently. Before applying heat transfers, take care to test acrylic apparel.

BURLAP

Also called “hessian” or “gunny cloth”, burlap is a rough, woven material used in rugs and bags, dating back to the early 19th century. Burlap is woven from the skin of the jute plant and mixed with other natural fibers. It can be heat pressed on without adhesion issues, but burlap offers the same challenges as other coarsely woven materials. The screen print inks will sink into every nook and cranny, causing the final product to look wavy or blurry.

BATTING

A general term for fabric used between layers of other fabric to make it warmer and insulated. For example, a winter quilt may have a layer of cotton fabric on top, layers of batting inside, and a layer of cotton on the bottom. The cotton on top and cotton on bottom are sewn together, with the batting snugly inside. **Pellon®** is a type of batting. Generally, transfers will not be applied to batting, but to the fabric on either side of the batting.

BAMBOO

A natural fiber which has recently seen use in conventional clothing. Today, bamboo fibers can be soft enough to use in items like socks and scarves. Manufacturers will also mix bamboo with other natural fibers, like cotton. This makes use of bamboo’s soft feel and its natural ability to eliminate body odor in items like socks. Heat application is possible on bamboo, particularly bamboo blends. Take care to test 100% bamboo apparel to avoid scorching. Bamboo is seen as an ecologically friendly product because of how it is grown and harvested.

CANVAS

A heavy duty fabric traditionally made from hemp, but today is usually made from cotton. Canvas was first used for tents, tarps, bags, and for painting. Today, canvas is also used for backpacks and martial arts uniforms. Materials with coarse or heavy weaves may cause the screen print to look wavy, smeared, or could cause the apparel to bleed through. This is because the ink fills every crevice in the weave.

CHIFFON

Chiffon is a type of lace that can be made from cotton, synthetics, or, in the case of more expensive apparel, silk. Chiffon is used for very high-end apparel like gowns and blouses. It should not be heat pressed due to its fragile nature.

CATIONIC DYEABLE POLYESTER

During the chemical process involved in making this polyester, a subtle change is made to the chemical structure to give the fibers an anionic charge. This change causes the finished polyester to attract a type of dye called cationic dye. When the polyester is combined with cationic dye, the color bonds to the fiber of the apparel on a chemical level. Think of it in terms of magnetism, where the negatively charged side of a magnet attracts and is attracted to the positively charged side of a magnet. This creates dyed polyester apparel which is very rich in color and generally will not bleed. However, this apparel is still sensitive to heat since they are 100% polyester. Using a transfer with a low application temperature will help avoid potential scorching.

COCONA®

Owned by Orvis Corporation, Cocona® is made from recycled coconut shells. In a proprietary process, the company refines a coconut husk into a useable fabric. Cocona® claims to be a quick drying fabric which does not hold odors or fade over time. Because of its tensile strength these fabrics are woven much more lightweight than cotton or bamboo. Since the process is proprietary and new, 100% Cocona® is relatively expensive. It's now being mixed with other natural fibers like cotton and bamboo. When heat pressing, treat Cocona® like cotton.

CREPE

This fabric is very similar to **Chiffon** or **Silk**. It should not be heat pressed due to its fragile nature.

CORDURA®

Introduced by DuPont™ in 1929, Cordura® was originally made of Rayon fibers. In 1966, DuPont transferred the Cordura® name to a series of nylon products due to their durability. Cordura® nylon began to see use in luggage in the 80s because of its durability and soft feel. In 2004, the Cordura® name was sold to the Invista Company, and now Cordura® can be found in heavy-duty workwear, bikerwear, and U.S. Military uniforms and apparel.

ELASTANE

See **Spandex**.

DAZZLE®

A type of weave made of polyester or nylon fibers. Make sure to clarify whether the apparel is polyester or nylon. Dazzle® fabric is shiny, soft, and silky to the touch. This special weave makes the fabric breathable and ideal for sports uniforms. It doesn't stain easily, holds its shape well, and is difficult to tear. If the Dazzle® is polyester, then it's easier to decorate. If the Dazzle® is nylon, you will need materials which work specifically on nylon.

ELASPAN

See **Spandex**.

FLEECE

Not to be confused with Polar Fleece (a brand name), the word fleece is a general term referring to a soft fabric with a deep pile. Fleece is a word associated with thick, warm apparel. Most fleece apparel is made of cotton, but polyester fleece is out there too. The fleece part of the apparel is the inside – the soft, fluffy interior of a sweater for example. Because fleece is either cotton or polyester, most transfers will apply without problems.

FELT

A fabric made of either natural wool fibers or synthetic fibers. Felt comes in many types — smooth, rough, soft, or coarse – and many colors. Natural wool felt can be heat pressed like any other wool product. Synthetic felt, which is usually cheaper and more common, can melt or burn if heated. It depends what was used to make the felt (i.e. acrylic, polyester, etc.). With synthetic felt, attempt a test application first to see if it will accept the heat. Transfers which work at a lower temperature are less likely to melt synthetic felt.

FRENCH TERRY

A type of terry cloth that Lycra® has been added to.
See **Terry Cloth**.

HESSIAN

See **Burlap**.

GUNNY CLOTH

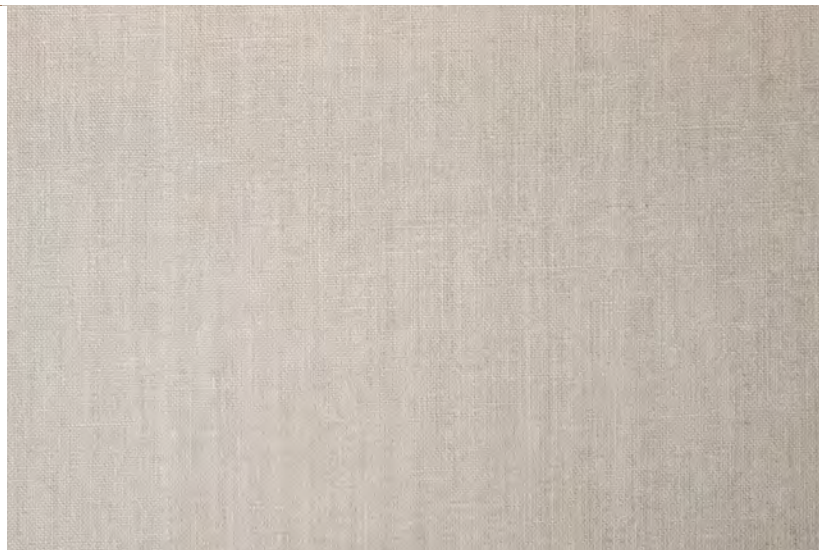
See **Burlap**.

GORE-TEX™

A trademark of W.L. Gore and Associates, Gore-Tex™ feels and acts a lot like **Nylon**. The fabric is made by taking other synthetic fibers and treating them with a special chemical bath, making the fibers waterproof and windproof when woven together. Officially the manufacturer does not suggest decorating their apparel, but some transfers will apply to it. As always with materials like this, test the apparel ahead of time.

JACQUARD

A type of weave used on cotton and polyester fabrics. For heat application, it's important to know if the fiber is cotton or polyester and choose a transfer accordingly.

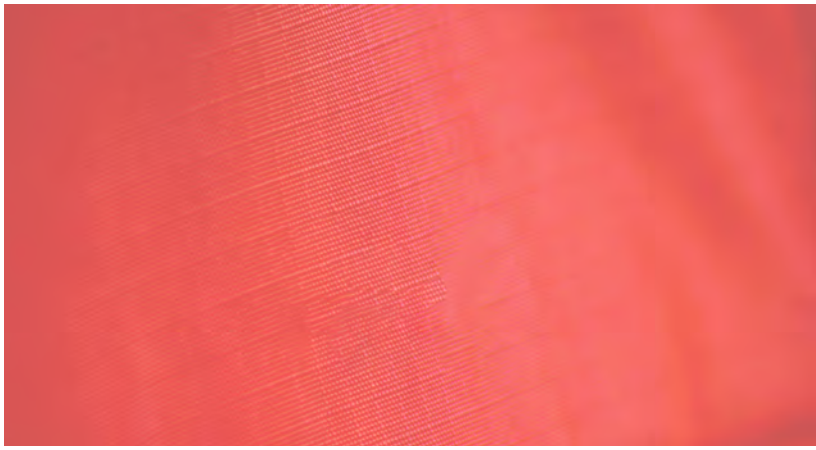


JUTE

A natural fiber made from vegetables, jute is made and used primarily in India and China. It is desired because it is cheap and environmentally friendly. In the United States, jute is slowly becoming more common for use in curtains, rugs, and carpets. In the apparel industry, there are several manufacturers using jute in an eco-friendly tote bag. When heat pressing, it should be treated like any other natural fiber, like cotton or bamboo.

LINEN

Linen is very expensive to harvest and weave, so it's considered high end. Because of the loose weave of linen fabric it remains breathable and cool and is ideal for hot climates. Common uses today include sheets, tablecloths, aprons, bags, and high-end clothing. Linen will scorch at high temperatures and should be tested at 300°F before heat applying. A transfer should stick to this fiber, but requires care not to burn the apparel.



LUREX®

Made popular in the 1970s, Lurex® is a synthetic fiber coated in a fake aluminum finish, giving it the look of a metallic thread. Lurex® is heat sensitive, making it possible to melt, though the melting point is unclear because apparel is never 100% Lurex®. Usually, apparel will be cotton or polyester with some Lurex® fibers mixed in for effect. The Lurex Company officially suggests not touching the Lurex® threads directly with a heat press. When attempting to heat apply, use a cover sheet between the apparel and the heating element. There is a high variance in the way Lurex® is made, so always test the apparel before committing to an order.

LYCRA®

See **Spandex**.

MODAL

Similar to **Rayon**, modal is a semi-synthetic cellulose fiber. Modal is very soft and is often mixed with cotton to make bathrobes, towels, sheets, and underwear. Modal is considered high-end because it does not shrink, fade, or stretch out of shape. Heat pressing apparel with a modal blend is no problem. Apparel with high concentration of modal should be tested before applying to avoid scorching.

NYLON

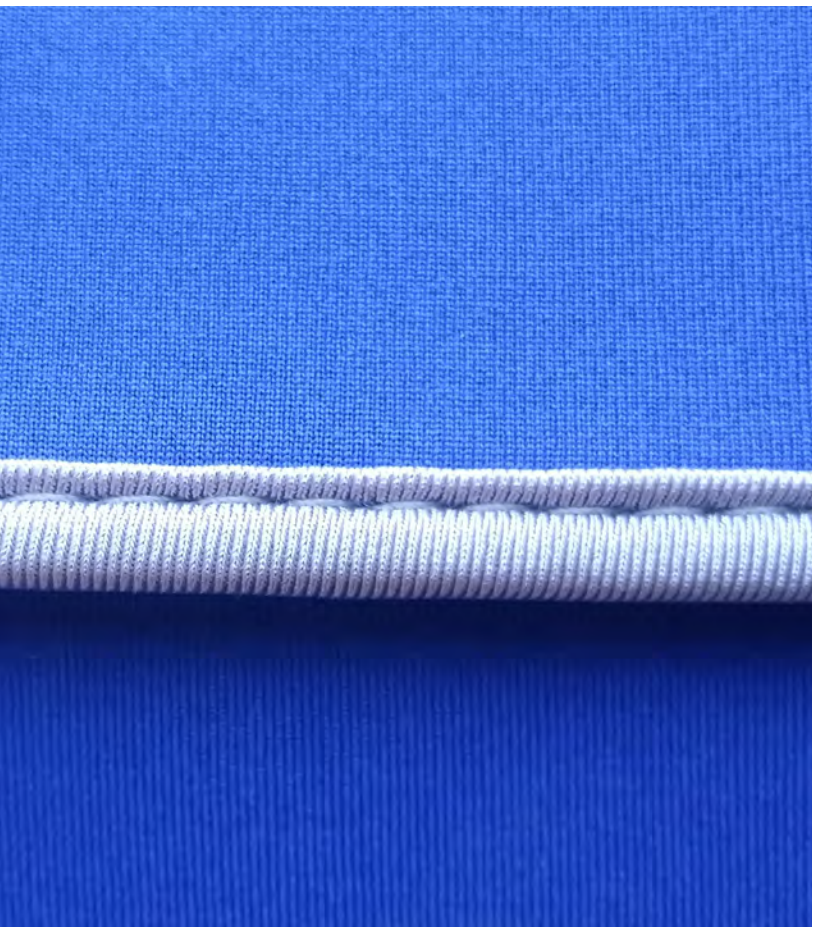
Nylon is a synthetic fabric originally designed to replace silk. Today it's used alone or mixed with other fibers to create everything from women's hosiery to outerwear to sports jerseys. Nylon can be heat sensitive so opt for a transfer with a lower application temperature and always test to avoid burning the material.

LYOCELL

A medium-weight fabric, lyocell is also called by its brand name, Tencel™. Lyocell is similar to rayon and modal in that it is technically a natural fiber. Lyocell is made from eucalyptus tree wood, which is dissolved into pulp and formed into sheets of paper. The paper is dissolved in further chemicals and then formed into fibers. Today lyocell is more expensive to produce than cotton or rayon, so apparel is rarely 100% lyocell. It can be mixed with cotton, rayon, and polyester. Lyocell by itself can be treated like cotton. When mixed with other fibers, the transfer type should be decided based on what it's mixed with.

NOMEX®

This is a nylon-related fiber owned and produced by DuPont. Nomex® is used for making racing suits, flight suits, and firefighter equipment because it's fireproof. It has properties which make it chemical and radiation resistant. In manufacturing, sometimes a layer of Nomex® is placed under a cotton or polyester outside layer. If this is the case, then regular screen printed transfers would work great. However, with some apparel, the Nomex® layer is the outside layer and plastisol ink will not properly stick. To determine whether the Nomex® is on the outside of the apparel, test with a sample transfer.



NEOPRENE

A synthetic foam in the rubber family, neoprene is used to make laptop covers, wetsuits, and can coolers. Neoprene is valued for its ability to absorb shock and insulate so heat doesn't escape. If the object can lay flat on a heat press, heat transfers will work without a problem.

PIQUÉ

A woven fabric made from cotton. Piqué's trademark is its texture. It's woven so it has a pattern of raised and/or dimpled geometric shapes, like squares, circles, or diamonds. It can have an appearance of waffle or honeycomb. Transfers will stick to it, but details will get lost in the intricacies of the weave.

PELLON®

Made from polyester fibers, Pellon® is not woven, but compressed. Imagine trying to sew onto a fabric that is very thin and delicate. The Pellon® makes the stitching more stable and resistant to tearing off. Most transfer types can be safely applied to Pellon®.

OXFORD

This is a type of weave. Oxford weaves can be found in a lot of apparel: cotton, cotton/polyester blends, and nylon. This type of weave is coarser then other weaves like **Taffeta** and **Sateen**. With a deep weave like **Piqué**, screen print will stick to it, but the weave may be deep enough to create bleeding and blurring problems.

POLYESTER

A synthetic which is considered the most versatile fabric around today. Polyester can be used by itself to make fabrics durable, fade resistant, wrinkle resistant, and water resistant. For this reason, manufacturers will often mix their natural fibers with polyester for its benefits. Polyester is also used to make other types of fabrics, like **Dazzle®, Sateen, and Taffeta**. Polyester can be found in virtually any apparel type on the market. Because of its durability, polyester can be heat pressed with no problem and, barring any chemical coatings, can handle any heat pressed transfers. If it's heat-sensitive polyester, transfers that apply at cooler temperatures are best.

POLYAMIDE

This fabric is a type of nylon formulated differently on a molecular level – the result being a very sheer fabric. Polyamide can be found in any apparel where nylon is used, from jackets and undergarments to high-end dresses. It can be heat applied, but be sure to test the application temperature to avoid scorching.

POLYETHYLENE

Another plastic polymer found in several different plastic products. Polyethylene is most commonly found in plastic shopping bags, toothpaste tubes, and the thin plastic bags the newspaper comes in. This material has a low melting point and cannot be heat printed.

POLYURETHANE

A relative of the plastic family, this polymer has more of a foam consistency than its other plastic cousins. It's used in everything from insulation in its foam form, to a wood sealer in its liquid form. Polyurethane can be found in bathmats, yoga mats, and other soft, foam-like materials. Polyurethane's melting point is usually around 300°F, but this is not consistent.

POLYPROPYLENE

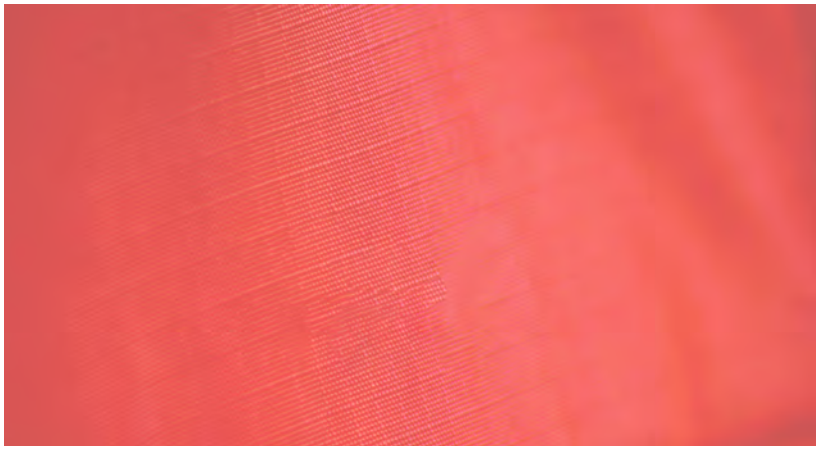
A plastic polymer initially used in diapers and sanitary medical-related products. Because of its plastic nature, polypropylene is recyclable and seen as an eco-friendly option. At this time, it's primarily used for tote bags in the apparel industry, but manufacturers are experimenting with its future use in performance wear. Polypropylene melts near 300°F so will require heat-sensitive application.

POPLIN

Also called “tabinet” in Europe, this fabric can be woven from cotton, polyester, silk, or rayon. This weave type creates a strong, but mildly stiff fabric which doesn’t wrinkle easily. It’s usually used in nice shirts, upholstery, and tablecloths. As with other weaves, the first question should be “Which fiber is it made out of?” If the poplin is silk or 100% rayon, then it will be sensitive to heat and pressure, and should not be heat pressed. If it’s made from cotton or polyester, the heat will not be a problem. Still, test the fabric on the heat press to see if the pressure flattens out the weave.

RAMIE

Very similar to **Jute** (see above), ramie is a fabric made from the plant of the same name. Ramie, also known as china grass or white ramie, is regarded as the source for one of the first woven fabrics in the Eastern parts of the world. Ramie is expensive to make and requires a very long process of dissolving, chemical treatments, weaving, washing, bleaching, and so on. Though uncommon in the United States, ramie can be found in shirts and pants in eastern Asia. It’s incredibly durable, can be bleached, and never shrinks. However, it’s very stiff and wrinkles easily.



RAYON

A unique, semi-synthetic rayon is known for its soft feel and is often used as a substitute for silk. Rayon also gained popularity as a replacement for cotton during the 2010 cotton shortage. Generally, shirts will only have a small percentage of rayon. These can be safely heat pressed. Test the apparel for scorching. A transfer which applies at a lower temperature may be necessary.

RIPSTOP

Not a type of fabric, but a special feature for fabric – ripstop is a weaving strategy which makes fabric very difficult to rip or tear. Ripstop material can be made of polyester, nylon, or polyethylene. Applying heat transfers depends on the type of material used to create the ripstop.

SATIN

Satin is a woven fabric usually woven from silk, nylon, or polyester fibers. It's shinier and softer than sateen. Knowing what fibers the satin is made of is key to successfully heat pressing it.

SPANDEX

A synthetic fiber with many brand names – Lycra® and Elaspan® – Spandex has made huge changes in the apparel industry because of the amount of stretch and strength the fabric has. Spandex is often mixed in with other synthetic fibers to make the apparel strong, stain resistant, water resistant, colorfast, and durable. Spandex can be found in many pieces of apparel, including athletic wear, pants, underwear, hosiery, leggings, belts, socks, wetsuits, swimsuits, and even diapers. Because spandex is typically combined with other fibers like cotton or polyester, look at the care label to determine the best heat printing method.

SILK

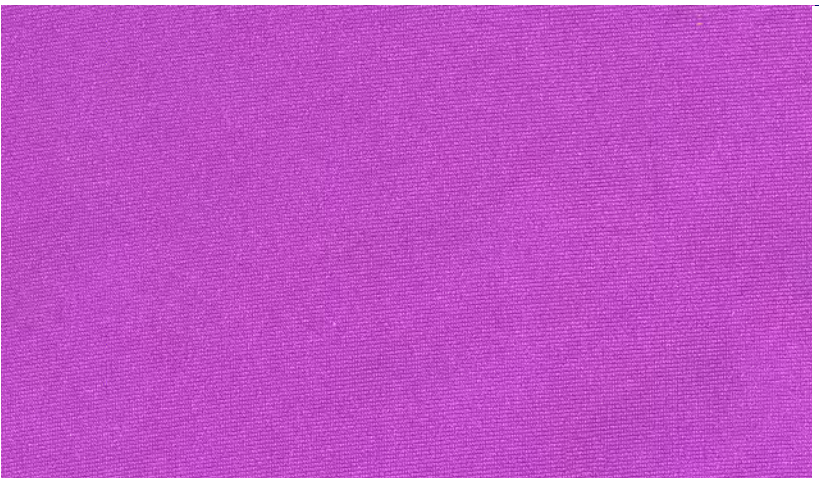
This natural fabric is used in high fashion articles of clothing because of the amount of time and effort it takes to cultivate and weave. Items include high-end shirts, blouses, neckties, robes, and dresses. Silk is incredibly delicate in its chemical make-up and cannot take high heats.

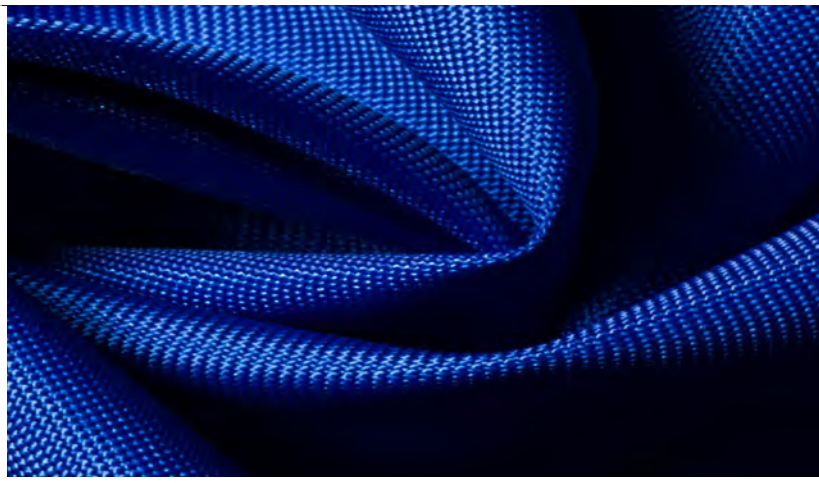
SATEEN

A fabric woven like **Satin**, but with spun yarns instead of filament. Similar to satin in sheen and soft feel. To heat press, learn what the sateen is made of, then choose the correct transfer.

SLUB

A slub tee or a slub hoodie is a 50/50 tee or hoodie woven just like other tees and hoodies. The difference is during the weaving process the thread is periodically twisted, causing a texture change on the inside of the apparel. It will feel lumpy when laid flat. When used for T-shirts, they are often worn tight to the skin. Hoodies, on the other hand, are usually worn a size larger and may have wide cut necks. When applying on slub apparel, any transfer type will work, though a thinner, lighter transfer is preferred.





SUPPLEX®

Another nylon type fiber introduced by DuPont in 1985. Supplex® was originally marketed with the phrase, “You won’t believe it’s not cotton.” Supplex® was meant to be a soft, wrinkle resistant, water resistant, color fast synthetic alternative to cotton. While the product never became as popular as DuPont hoped, it can still be found in high-end jackets, shorts, and workout gear.

TAFFETA

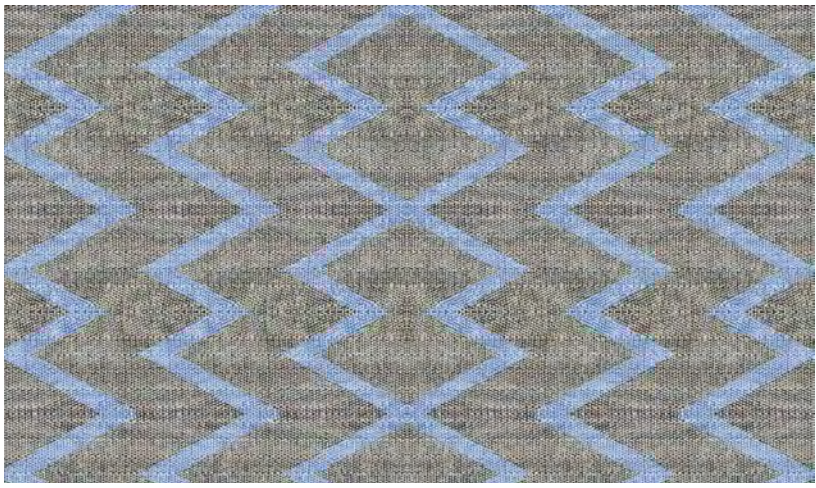
A high-end, smooth woven fabric made from silk or rayon, and widely used in ballgowns and wedding dresses. Taffeta varies in quality and composition, so take care if attempting to heat press as it can be exceptionally delicate.

TARPAULIN

Tarpaulin is the long name for a tarp, like would be used outside. Usually used in tents, shelters, soccer nets, and other outdoor products. It has also begun to be used in making cheap, reusable tote bags. It’s typically made from waterproofed polyester or polyethylene. Test waterproof polyester for heat application before accepting a job, but tarpaulin made up of polyethylene should not be heat pressed.

TENCEL®

See **Lyocell**.



TERRY CLOTH

Usually woven from 100% cotton or a 50/50 blend, terry cloth is a high pile fabric made by looping fibers. Terry cloth is used in making towels and robes because the fabric loops make it easy for the fabric to absorb water. Most transfers will work on terry cloth with no problem, but the transfers will mat down the loops.

TWILL

Twill refers to a style of weave used on existing fibers. Twill weave is often found in the making of denim, chino, and tweed fabrics. Twill can be woven from cotton fibers or polyester fibers. High-end hats are often made of twill, and some high-end sports jerseys will have twill sewn on, then heat pressed to them.

VELVET

A very high fashion fabric which used to be reserved for royalty. Traditional velvet is woven from silk fibers, though imitation velvet is woven from cotton (velveteen), linen, and wool. Velvet has a low, dense pile, giving it a distinctive feel and sheen when looking at it from an angle. Velvet is sensitive to heat and pressure. It should never be ironed and should be taken to an experienced dry cleaner to be cleaned. Assume a heat press will ruin velvet. Test the fabric before ordering anything. Heat pressing velveteen will cause the pile to permanently flatten out.

VINYL

Vinyl is a relative to the plastic family and it's used in thousands of products. As a rule of thumb, vinyl should be tested at 300°F before heat printing because some vinyl is heat sensitive and could make quite a mess on a heat press.

VISCOSE

See **Rayon**.

WOOL

A natural fiber obtained by cutting or sheering it off an animal. Wool is used when apparel needs to be thick and warm, like socks, hats, and coats. Wool is also used for blankets, riding products, and felt. Wool is heavier than cotton and less breathable. In terms of transfers, wool should be treated the same way as cotton – it can be stretchy, smooth, or coarse.

When learning about fabric and heat decoration it's helpful to speak the same language as textile manufacturers. Here are some common terms in the industry and definitions to help you navigate the world of textiles and heat decoration.

DENIER [DUH-NEER] – A unit of measurement indicating how fine a material's weave is. Specifically, denier refers to the weight of a fiber. 1 denier = 1 gram per 9,000 meters of a fiber. So, this means the higher the number, the heavier the weight of the fibers used. Lightweight apparel has a lower denier. For example, a woman's nylons could be 7 denier, but a heavy-duty nylon awning could be 1,000 denier.

DYE MIGRATION – Dye migration, or bleeding as it's most commonly called, occurs when the ink used to dye the fibers of a polyester garment are reheated to temperatures above 280˚F. At this temperature the inks are reactivated and released from the fibers. When they are released the dyes will come through heat transfers and cause discoloration, like a faint red (or pink) number on a red jersey.

GSM – This stands for "Grams per Square Meter." GSM is another way to measure the weight of a piece of fabric, instead of denier. Grams per square meter is primarily used overseas in countries utilizing the metric system. It's simply the weight of a square meter of fabric.

MICROFIBER – A thin fiber measuring less than 1 denier. Microfiber can be made from polyester, nylon, Nomex®, or a combination of those materials. It's quite popular in the sporting industry for cycling jerseys and other tight-fitting jerseys because of how well it wicks moisture from the skin. It has also been used in high-fashion women's skirts and jackets due to its soft nature.

MOISTURE WICKING – This term refers to some fabric's ability to absorb sweat from the skin and pull it through to the outside of the apparel. This leaves the wearer's skin dry and comfortable, and allows the sweat to evaporate more quickly. Both nylon and polyester have the capacity to wick moisture as noted above. This term alone has no effect on the adhesion of heat products as it's not a special coating, but a natural ability of some fibers.

PILE – This is a term usually used to describe the soft, raised surface of a fabric like velvet, fleece or corduroy. The higher the pile, the softer the fabric. For example, the fabric of a standard 50/50 T-shirt is very low pile. It isn't raised or particularly soft and plush. A brand-new terry cloth towel however would have a high pile.

PVC COATING – PVC is the abbreviation for polyvinyl chloride, a plastic polymer. PVC is a generic term used when talking about different kinds of plastic used in everything from ceiling tiles to water pipes. In the apparel industry, PVC is a coating used to make apparel waterproof. These coatings are generally found on different kinds of outerwear and high-end backpacks. Because PVC coatings can cause problems under heat, it's strongly suggested the material be tested before beginning a project with it.

MESH – Mesh is a porous woven or knitted fabric made from a variety of materials. Mesh apparel is typically used in sportswear, active wear, and occasionally in fashion. Here are a few terms regarding mesh:

DRI-FIT, AEROCOOL & COOL MESH – These are brand terms referring to a type of jersey in which nylon or polyester has been mixed with cotton or another natural fiber. This apparel is advertised as not only good at wicking away sweat, but the added natural fibers like cotton make the apparel more breathable and comfortable, allowing a person to cool down more quickly. When decorating this apparel, determining whether they are made of predominantly nylon or polyester will determine which transfers to use.

PORTHOLE, MINI, & MICRO MESH – These are all terms simply referring to the size of the holes and the denier of the mesh fabric. All three can either refer to polyester mesh or nylon mesh. The porthole mesh has largest holes and the heaviest denier. Porthole mesh is used for some football jerseys or mesh laundry bags. In contrast, the micro mesh has tiny holes, smaller denier, and it's used for basketball and lacrosse jerseys. Mini mesh is between the other two and may be used in any of the sports previously mentioned as well as soccer. With any of these products, knowing whether it's made of nylon or polyester is essential for making the proper choice of transfers.

TRICOT MESH – Tricot is a term referring to a style of knitting or weaving. The tricot style will generally leave one side of the apparel smooth and the other side textured. Tricot mesh is the style of weave used in mesh jerseys, underwear, and sleeping bags. It's most often present in high-end apparel and items. Tricot mesh comes in both polyester and nylon varieties so it's necessary to know what material is being used to determine a transfer type.

NON-WOVEN – This refers to a type of apparel in which the fibers are not woven together like a traditional cotton or polyester T-shirt. Instead fibers are forced together using heat, chemicals, or a combination of both to form a roll of fabric. For example, polypropylene is a non-woven fabric. Small chunks of plastic are melted and formed into threads. These threads are then laid one on top of another forming a web. Then layer upon layer of web are laid on top of each other, eventually forming a solid roll of polypropylene. Non-wovens come in many types and most of them are heat sensitive. Always make sure to test new fabrics on the heat press.

PERFORMANCE WEAR – Apparel worn close to the skin because of its wicking properties. Performance wear is made to be tight, but flexible so it can be worn under a uniform or as a uniform itself in some sports. Some performance wear has a loose fit. This apparel can be decorated with any heat applied product that is appropriate for polyester. However, other performance wear is referred to as compression fit. This apparel is worn skin tight and will generally stretch to some degree. For this fit, use products designed for maximum stretchability.

SUBLIMATION – A high-end process of decorating apparel that involves dying the apparel with a gas process. The apparel is made of polyester and starts the process as white or very light grey. After the sublimation process is complete, the apparel will show a different color(s) on the outside, but still show the original white or light grey on the inside. Sublimated apparel is prone to **Dye Migration** so heat applied products designed to reduce or block it are essential.

TRI-BLEND - A tri-blend is a fabric made up of three different fibers often in percentages like 50% polyester, 25% cotton, and 25% rayon. The blend makes a shirt softer. To heat apply on a tri-blend choose the transfer designed for the highest fiber content of the blend.

NATURAL VS SYNTHETIC

Natural fabrics, like wool or cotton, are made of fibers produced by animals and plants. Synthetic fabrics, like polyester or nylon, are 'man-made' fibers created in laboratories. These differences mean fabrics will respond differently to dying, washing, heat applications, and wear.

STAHLS' TRANSFER EXPRESS

FABRIC TYPE	PREFERRED TRANSFER
BAMBOO	ALL
BATTING	ALL
BURLAP	GOOF PROOF®, POLYTRANS, CAD-PRINTZ® OPAQUE, EXPRESS
CANVAS	ALL
CATIONIC DYEABLE POLYESTER	ELASTI PRINTS™, POLYTRANS, STRETCH LITHO™, AQUATRU™
CHIFFON	NONE
COCONA®	ALL
CORDURA®	CAD-PRINTZ® OPAQUE, AQUATRU™
COTTON	ALL
CREPE	NONE
DAZZLE® (POLYESTER)	ALL
DAZZLE® (NYLON)	CAD-PRINTZ® OPAQUE, AQUATRU™
ELASTANE	CAD-PRINTZ® OPAQUE, AQUATRU™
ELASPAN®	CAD-PRINTZ® OPAQUE, AQUATRU™
FELT	NONE
FLEECE	ALL
FRENCH TERRY	CAD-PRINTZ® OPAQUE, ELASTI PRINTS™, AQUATRU™
GORE-TEX™	CAD-PRINTZ® OPAQUE, AQUATRU™
GUNNY CLOTH	ALL
HESSIAN	ALL
JACQUARD	ALL
JUTE	ALL
LINEN	ELASTI PRINTS™, STRETCH LITHO™, AQUATRU™
LUREX®	VARIES, TESTING NEEDED
LYCRA®	CAD-PRINTZ® OPAQUE, AQUATRU™
LYOCELL	DEPENDS ON THE MATERIAL IT'S MADE OF
MODAL	ELASTI PRINTS™, POLYTRANS, STRETCH LITHO™, AQUATRU™, CAD-PRINTZ® OPAQUE
NEOPRENE	ALL
NOMEX®	VARIES, TESTING NEEDED
NYLON	CAD-PRINTZ® OPAQUE, AQUATRU™

STAHLS' TRANSFER EXPRESS

FABRIC TYPE	PREFERRED TRANSFER
OXFORD	CAD-PRINTZ® OPAQUE, AQUATRU™
PELLON®	ALL
PIQUE	GOOF PROOF®, POLYTRANS, AQUATRU™, CAD-PRINTZ OPAQUE, EXPRESS
POLYAMIDE	CAD-PRINTZ® OPAQUE, AQUATRU™
POLYESTER	ALL, TEST FOR SCORCHING
POLYETHYLENE	NONE
POLYPROPYLENE	ELASTI PRINTS™, AQUATRU™
POLYURETHANE	ELASTI PRINTS™, AQUATRU™
POPLIN	DEPENDS ON THE MATERIAL IT'S MADE OF
RAMIE	ALL
RAYON	ELASTI PRINTS™, AQUATRU™
RIPSTOP	DEPENDS ON THE MATERIAL IT'S MADE OF
SATEEN	DEPENDS ON THE MATERIAL IT'S MADE OF
SATIN	DEPENDS ON THE MATERIAL IT'S MADE OF
SILK	ELASTIPRINTS®, AQUATRU™, EXPRESS MATTE 250
SLUB	ALL
SPANDEX	CAD-PRINTZ® OPAQUE, AQUATRU™
SUPPLEX®	CAD-PRINTZ® OPAQUE, AQUATRU™
TAFFETA	DEPENDS ON THE MATERIAL IT'S MADE OF
TARPAULIN (WATERPROOF POLYESTER)	VARIES, TESTING NEEDED
TENCEL®	DEPENDS ON THE MATERIAL IT'S MADE OF
TERRY CLOTH	ALL
TWILL	ALL
VELVET	NONE
VINYL	CAD-PRINTZ® OPAQUE, AQUATRU™
VISCOSE	ELASTI PRINTS™, POLYTRANS, STRETCH LITHO™, AQUATRU™
WOOL	ALL