

# Embroidery Technologies, LLC

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## EMBROIDERY BACKINGS

### INTRODUCTION TO EMBROIDERY BACKINGS

One of the most important elements in producing good embroidery is choosing the correct backing for your application. It takes time and testing. It requires an understanding of the various types of backing offered in the market.

This article is intended to help you make the right decisions. It is designed to inform you of the many types and varieties of embroidery backings available to you and how they are used.

### FINDING THE RIGHT SUPPORT

Good embroidery requires good backing. With an understanding of what is available and some experimentation, you will be able to find a suitable backing or combination of backings for almost any embroidery design. It can be confusing. There are many choices. The recent growth of the embroidery industry has enabled the larger backing manufacturers to now offer as many as 17 different material types for all sorts of applications. Backings also have improved significantly over the last few years. A review of backing basics is helpful.

Despite the number of products available, all of them can be classified as tearaways, cutaways or specialty backings. This makes the task of selecting one at least appear easier. The major suppliers should provide you with test squares to experiment with and a swatch book of samples. Any frustration you might encounter in finding the right support for your embroidery designs should not cause you to leave this important decision to chance.

### Backing Selection

When it comes to selecting your own backings, knowing what backings other embroiderers use with a particular garment is a good start. Unfortunately, this information may not provide all the answers or, for that matter, any of the answers for your particular machine or design. Stability of the garment fabric, stitch density, color, stitch length, stitch speed, size of the embroidery and stability of the design are just some of the variables that can influence backing selection.

Besides consulting other embroiderers, attending one of the many embroidery trade shows is a good source of current product, pricing information and application ideas. At least one of the exhibiting backing suppliers will have sample packs of products large enough to work with. Most of the shows have embroidery seminars that run concurrent to the show. These seminars can be helpful.

Fabric stretch is probably the most important factor in selecting backing. Backing, no matter what its type, has to be stable enough to prevent movement during the stitching process. There are many different types of fabrics and many qualities within those types. Experimentation is often needed even when changing blank suppliers of what appears to be an identical garment. A fabric's structure (weave or knit pattern) is apt to be a better indicator of stability than weight alone. This is particularly true of golf shirts.

How well you hoop your fabric has an impact on the finished product. Poor registration can occur from loosely hooped or insecurely hooped garments. This is not a backing problem. A secure grip on thick or slippery materials can be gained by using higher hoops. Fabric tension in the hoop can be checked by pushing your finger across the fabric. If you see wrinkles, your tension may be too loose.

How much inventory of backing you want to carry is another variable not often discussed by backing suppliers. A small contract embroidery shop can complete most work with just two items: 1) a 2 oz tearaway and 2) a 2.5 oz cutaway. The larger shops will want to add a 3 oz tearaway for caps and a roll of Peel and Stick for problem applications. Specialty embroiderers and large manufacturers tend to stock a broader range of products.

The least expensive way to acquire backing is to purchase it in full or half width rolls. This option allows the small embroiderer to have a sensible backing inventory of only two or three rolls. These rolls can be used for most any design requirements no matter what its size. Backing suppliers can supply precut sheets in virtually any size requested. The popular sizes are 6-, 8- and 15-inch squares. These sizes are usually stocked items. The additional cost for cut sheets is nominal. Cutting your own sheets can be a false economy. This is particularly so if your operators do it by hand or by some semi-automatic system. Some frugal users purchase cases of 15 x15-inch sheets and cut them down with a paper cutter to maximize their use.

Be cautious in using materials not specifically designed as embroidery backing for embroidery backing. Many of these products are available because they are seconds. This means a mistake of some sort was made. Some products have wild variations in weight. Extreme shrinkage, particularly dryer shrinkage, and bleeding colors are just two of the problems that can arise. Puckering can occur when using an inappropriate material with too much stretch. The use of such poorly performing products is often a testimony to an operator's stamina. The cost per garment for backing of any type is very small. However, using the wrong backing can be expensive.

In general, a large detailed design with filled areas embroidered on an unstable knit might use a heavier backing than a small design on a stable woven fabric. This general rule is broken on a regular basis. We recently saw a very acceptable 56,000 stitch design done on a T-shirt using two layers of tearaway. Selecting the right type of backing is a key decision.

## **Tearaways**

A tearaway is the backing of choice for most embroiderers. Designs can usually be finished more quickly, safely and cheaply with a tearaway than with a cutaway material. If you cut one expensive garment, the advantages of tearaways will be with you for life. Most tearaways range in weight from 1 to 3 oz. To perform well as a backing, a tearaway should be stable and able to withstand repeated perforations. To perform well as a tearaway, the backing should tear easily and cleanly in either direction. This seems obvious but some embroiderers are still using backings that tear only in one direction. These products have to be tugged at, leave long strings of fiber and take some courage to remove. Pulling too hard or too quickly on a tough tearaway on a delicate long stitch design can needlessly cause distortions.

No matter what type of tearaway is used, the accepted wisdom is that you should tear the backing as close to the stitches as possible to reduce any chance of distortion. Using two light layers of tearaway pulled off one at a

time is a technique that can avoid a distortion problem. However, this procedure is relatively expensive and time consuming.

Finally, in choosing a tearaway, most embroiderers consider ease of tear, cleanness of tear, hoop stability and perforation resistance as important factors in their selection process. Tearaways can be used on most items but, in general, should be used with caution on exceptionally delicate or stretchy fabrics such as loosely knit sweaters. Swimsuits and socks are often exceptions to this rule, and here a washaway/tearaway is a good choice.

## **Cutaways**

Cutaways are needed to provide a stable base for delicate and stretchy fabrics both during the stitching process and afterward. Some fabrics are so stretchy that they can actually force themselves down the throat plate. A cutaway not only helps maintain the crispness of a design's details during the embroidery process, but it also helps retain the design's shape after repeated washings. The experience of having an angry customer return a sagging or stretched design will help remind you of the advantages of cutaways. A quality embroiderer should insist that their cutaways are both washable and drycleanable.

The accepted wisdom of cutaways is that you should not cut very close to the embroidery with your scissors and that a gliding scissor motion rather than a cutting one should be used. A cutaway that has some rigidity will enable a gliding scissor motion. When cutting, both the backing and the fabric should be kept in view. Do not allow the garment to fold over. Some consultants to the industry recommend the use of blunt end scissors to prevent snagging fabric. Many people use 3.5-inch to 4-inch double sharps because of their general utility. Nippers are not particularly useful for this operation.

Most cutaways range in weight from 1.5 to 3.5 oz. Cutaways, in general, tend to be more resistant to needling perforations than tearaways. In choosing a cutaway, most embroiderers consider ease of cutting, wash stability, hoop stability and perforation resistance. Cutaways tend to have more bulk than tearaways. Softness, ease of cutting and stability can often be mutually exclusive properties for cutaway backings. In some cases, the embroiderer needs to determine which property is most important for a particular design. The softer backings tend to have more hoop stretch and, accordingly, will not allow as crisp a design as the stiff ones.

## **Specialty Backings**

There are many different items that may be classified under this heading. Some of the major ones are described next.

### ***Peel and Stick***

This product is a tearaway backing with a pressure sensitive coating and a release liner. Peel and Stick has three general uses. It is used in hard-tohoop applications such as shirt collars, cuffs, etc. It is used to stabilize high stretch fabrics such as bicycle shorts, promotional sweatshirts, etc. And finally, it is used to eliminate hoop marks that can occur with certain problem materials such as brushed denim and suede. A good Peel and Stick product should not have a gummy adhesive. The product is generally used by hooping the backing with the release paper facing upward. An X pattern is lightly cut in the hooped center such that the release paper is sliced through but not the backing. Enough of the release paper is peeled back so the portion of the garment to be embroidered can be stuck to the backing. Every custom shop should have a small roll of this product.

### ***Caps***

Most cap backings range from 2 to 3 oz in weight and are tearaways. A clean tearing product is generally preferred. Cap backing is used to improve the crispness of lettering and columns. This is particularly so with low

profile and unstructured caps. There are several other less obvious production benefits in using cap backing. Backing keeps up the tension on the bobbin thread. This allows the embroiderer to switch from flats to hats and back again without touching the machine settings. The use of this backing can prevent cap fabric and fiber from being forced down the throat of the machine. An extra fold of backing can be used to get a firm seating on rotating cap frames to prevent registration slips.

### ***Fusibles***

There are several medium weight fusible backing products available that can be permanently fixed to garments with a hand iron. The primary application for these products is as a stabilization aid for very stretchy and hard-to-hoop materials such as fleecewear, leather, etc. Spray adhesives can also be used to fix backing to fabric. The nasty solvents and overspray problems often associated with spray adhesives make fusible or peel and stick backings preferred in such applications.

### ***Metallic Thread***

A secondary application area for fusibles is as a cover for completed embroidery designs that may have a rough surface or nubs on its interior surface. This situation is often caused by metallic thread due to its stiffness. This soft-to-the-touch fusible product adds a permanent quality finish to a garment. For a little extra effort you will receive compliments rather than complaints when using metallic thread. Before using any fusible product, you should first check that the garment will withstand hand ironing.

### ***Puff***

Puff backing is a lofty material used to generate a three dimensional, trapunto or a quilted look. Do not purchase puff too thick or you will have a difficult time completing the design. Before using puff products, you should test or at least receive a solid guarantee that the product is washable and drycleanable. If the product washes down or falls apart, the results for the consumer can be disappointing.

### ***Children's Sleep wear***

All components in children's sleepwear should be fire retardant. These binder-free backings meet this requirement due to their fiber composition. Most materials range from 1.3 to 2.5 oz.

### ***Black Backings***

Black backings are used for dark garments such as leather jackets and black sweatshirts, etc. The use of these products prevents the generation of a distracting blaze in the interior of the garment that occurs when white is used. Both tearaways and cutaways are available.

### ***Toppings***

As a general rule, these films are used to prevent stitches from sinking into high profile fabric, such as terry cloth or corduroy. Available under a variety of trade names, they are composed of either polyethylene or water soluble plastic. These films can be expensive. Some of the less expensive ones do not dissolve very well.