

Just EMBROIDER It!

All About Stabilizers

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Introduction

A stabilizer (referred to in industrial circles as backing) is an essential for machine embroidery. It is used to support the fabric during the stitching process to keep puckering or stretching from occurring.

The choice of stabilizer can make or break an embroidery project. Using a stabilizer that is insufficient for the fabric or the stitch count of the design can make even the best digitized design look bad.

Stabilizers are classified by the method used to remove the excess from the back of the project after the design has been stitched. The three most common types are:

- 1) Cut-Away
- 2) Tear-Away
- 3) Wash-Away

Within each group are several weights of stabilizer.

- Choose the weight that most closely corresponds to the weight of the fabric to be embroidered.
- Choose the weight according to the stitch count of the design – the greater the stitch count, the heavier the stabilizer should be.

Adhering any one of these stabilizers to the fabric with a temporary adhesive spray before hooping is recommended to keep the layers from shifting during the embroidery process and to make the item easier to hoop.



Choosing a Stabilizer

The most important factors to consider when choosing an appropriate stabilizer are:

- 1) Fabric
- 2) Embroidery Design
- 3) Back Appearance
- 4) The "Hand" or Feel
- 5) Test Results

Fabric

- The most important rule -- Use a cut away stabilizer when embroidering on knits or stretchy fabrics. The cut away will support the stitches not only during the embroidery process itself, but during the lifetime of the garment as well.
- Fabric weight and stabilizer weight should be compatible. In general, the heavier the fabric, the heavier the stabilizer should be. Conversely, the lighter, softer, or more drapery the fabric, the lighter the weight of the stabilizer should be.
- A sheer fabric will require a water-soluble stabilizer so that no remaining bits of stabilizer will be seen from the right side.
- The fabric and chosen design should be compatible. A lightweight fabric can become overwhelmed by a stitch-intensive design. Conversely, an open airy design can become visually lost in a napped or heavy fabric.

Embroidery Design

- The more stitches in a design, the heavier the stabilizer should be.
- Use a well-digitized design that has sufficient underlay to provide base support for the stitches.
- If it is necessary that you use a particular type of stabilizer, choose the design accordingly.

Back Appearance

- If you want absolutely no stabilizer to show from the wrong side, you must use a water-soluble stabilizer.
- If you are OK with *most* of the stabilizer being removed, you can use a tear away.
- When using a cut away stabilizer, the excess must be cut away leaving a circle of stabilizer on the back side of the project.

The "Hand" or Feel

- The weight and type of the stabilizer will influence the drape of the fabric.
 - A heavy weight stabilizer will add weight to the garment. Even a heavy tear away stabilizer will add weight since some stabilizer will remain behind the stitches.
 - The lighter the weight of the stabilizer, the greater the drape of the fabric will be.
 - A wash away stabilizer will add no weight at all to the fabric after it is washed.
- The cut edges of a cut away stabilizer remain on the back side of the project. The heavier the cut away, the more irritating this edge could be on a garment that will be worn directly against the skin.

Test Results

Testing is always highly recommended. Even though you follow all the stabilizer guidelines, they are just that – guidelines. There are many variables in fabric quality within each fabric grouping, as well as differences in the quality of the design. The best way to determine the proper stabilizer is to test.

Stitch Count*	Cut-Away	Tear-Away	Wash-Away
12,000 or less	PolyMesh Cut-Away	LightWeight Tear-Away	AquaFilm Backing
12,000 to 15,000	PolyMesh Cut-Away	Ultra Clean & Tear or Medium Weight Tear-Away	OESD BadgeMaster
15,000 to 25,000	Medium Weight Cut-Away	Ultra Clean & Tear or Medium Weight Tear-Away	OESD AquaMesh
25,000 or more	Heavy Weight Cut-Away	Heavy Weight Tear-Away	Wash-Away not recommended

*Stitch counts are provided as a guideline only. There are many additional factors to consider including design density. Design density is the relationship between the stitch count and design size. For example, a 4" design with 15,000 stitches will need a heavier stabilizer than an 8" design with the same number of stitches. For best results, do a test sew of your design.

Cut-Away Stabilizers

Cut-Away stabilizers are considered the most stable of the three stabilizer types.

They can be used on any fabric type, but **MUST** be used when stitching on knits or stretchy fabrics. The excess stabilizer will be cut away, but the stabilizer behind the stitches will be there for the lifetime of the garment and will prevent the design's stitches from popping as the garment is stretched or manipulated.

Removal:

- Trim with scissors no closer than ¼" to ½" away from the edge of the design and round any corners.
- Do not attempt to cut away open areas inside the design itself.
- Place the project with the stabilizer side down. Gather the fabric in your hands and cut the stabilizer. This will keep you from accidentally cutting the fabric!



Heavy Weight Cut-Away

- The heaviest stabilizer – will support the greatest number of stitches
- Available in white or black
- Great for use with sweatshirts and heavy fabrics

Medium Weight Cut-Away

- Will give more support than a lighter cut away, but will be less stiff than a heavy weight
- Great for medium weight T-shirts or fabrics

PolyMesh Cut-Away

- Minimal shadow through to the right side of fabric
- Very soft feel and gentle against skin
- Very little shadow through when used on a woven fabric such as batiste
- Available in white, beige, and black
- White PolyMesh also available in a fusible form (see Specialty Stabilizers)
- Great for use with baby items or children's clothing, and lightweight stretchy fabrics

Tear-Away Stabilizers

Tear away stabilizers are used when you wish to remove most of the excess stabilizer from the back of the project after embroidery. They can be used on all fabrics with the exception of stretchy fabric or knits or very sheer fabrics.

Removal:

- Place the embroidery with the stabilizer side up on a flat surface.
- Support the stitches with your fingers as you carefully tear the excess stabilizer away.
- Some tight open areas within the design may be very hard to remove and can be left on the back of the project. For most tear away stabilizers these areas will eventually begin to disintegrate with repeated washings.

Heavy Weight Tear-Away

- Tears away very cleanly and easily – stiff edges are easy to grasp
- Supports large number of stitches
- Great for items that need more support for heavier stitch count designs

Medium Weight Tear-Away

- Available only in black
- Firm tear away, but very easy to remove

Ultra Clean and Tear

- A soft medium weight tear away stabilizer
- Removes very easily – does not stress the stitches as it is removed
- Remaining fibers will easily wash away as the project is laundered

Light Weight Tear-Away

- The lightest weight of the tear away stabilizers – adds very little weight to the project
- Easy to tear away leaving a very clean edge
- Can be printed on and used for paper piecing
- Great for use when stitching decorative stitches on the sewing side
- Available in a fusible version (See Specialty Stabilizer section)



Wash-Away Stabilizers

Wash away stabilizers should be used when all traces of the stabilizer need to be removed from the back of the project, such as when using a sheer fabric or embroidering a project that will be seen from the back side as well as the front. Since this type of stabilizer does not support as many stitches as tear away or cut away stabilizers, careful consideration should be given to the design choice. Do not use this stabilizer if your fabric cannot be washed.

Removal:

- Remove as much stabilizer as possible by tearing or cutting away the excess.
- Rinse the project under warm running water until all traces of the stabilizer are removed.
- When creating lace, the more it is washed, the softer the lace will be.

AquaFilm Backing

- A clear lightweight backing – quick to rinse away
- Use for quilting in the hoop if the quilt itself cannot be hooped
- Too lightweight for stand-alone lace

BadgeMaster

- A heavy clear backing
- Can be used for stand-alone lace
- Majority of stabilizer can be torn away before rinsing

AquaMesh

- An opaque backing that supports the greatest number of stitches
- Can be used in the creation of stand-alone lace
- Very stable water soluble stabilizer that is not prone to premature perforation during stitching
- Excess cannot be torn away – cut the excess away from the outer edges and then rinse



Specialty Stabilizers

Fusible Stabilizers

Fusible stabilizers are used by cutting a hoop-sized piece of stabilizer and adhering it to the back of the fabric. This will prevent stretching of the fabric during the hooping process, and will help to keep outlines correctly registered. The fabric/stabilizer is then hooped in the traditional manner.

FUSIBLE POLYMESH CUT AWAY

FUSIBLE TEAR AWAY

To use:

- *Lightly* adhere the adhesive side of the stabilizer to the back of the project in the area to be embroidered.
- After the embroidery has finished, carefully separate the stabilizer from the fabric (heating with an iron very briefly may aid in this).
- Remove the excess by either cutting away the Fusible PolyMesh, or tearing away the Fusible Tear Away.

Paper-Backed Pressure Sensitive Adhesive Stabilizers (aka sticky-backed stabilizers)

These stabilizers are used in the same manner. They are all coated with the same type of pressure-sensitive adhesive with a protective paper backing.

The difference will be in the number of stitches that the stabilizer will support as well as the manner in which the excess stabilizer is removed. Select the stabilizer type (cut away, tear away, or water-soluble) by applying the same principles as if using a regular stabilizer. (Refer to earlier page on stabilizers.)

Most generally these stabilizers are used for “hoopless” embroidery.

STABIL-STICK CUT AWAY

STABIL-STICK TEAR AWAY

AQUAMESH PLUS (WATER-SOLUBLE)

To use:

- Hoop with the paper side up.
- Score and remove the paper to reveal the sticky surface.
- Position the fabric over the sticky surface and smooth into place.

To remove:

- Separate the stabilizer from the fabric by gently pulling the layers apart.
- Remove the excess by either cutting, tearing, or washing it away depending on the type of stabilizer used.

Water Activated Stabilizer

HYDRO-STICK TEAR AWAY

Hydro-Stick is a heavy weight tear away stabilizer with an adhesive coating that is activated by water. It is most often used for “hoopless” embroidery.

HydroStick holds the fabric VERY firmly. The project cannot be accidentally bumped or moved out of place during the embroidery process.

It will not gum the needles since it is not a sticky adhesive.

To use:

- Hoop the stabilizer with the coated side up.
- Moisten the top slightly with water and adhere the fabric to the top of the hooped stabilizer.
- Allow the stabilizer to dry for a few minutes before embroidering.

To remove:

- Lift a loose corner of the stabilizer and apply moisture to the area between the stabilizer and the back of the fabric.
- Continue to lift and moisten until the stabilizer has been separated. Then tear the excess away.



Toppings

As the name implies, toppings are used only on the top of the fabric to control the nap of the fabric. They are too lightweight to be used as the backing stabilizer.

AquaFilm Topping

- A clear water soluble product – excess easily removed with water
- Must be used on napped fabrics such as towels, knits, velvets, or velveteens to prevent the nap of the fabric from poking through the stitches
- Improves the appearance of the embroidery design on any fabric with any kind of an irregular weave

To use:

- Place the AquaFilm over the top of the hooped fabric. AquaFilm does not need to be hooped with the fabric, but it does need to be secured.
 - Moisten the corners and attach to the fabric, use Painter's Tape, or pins (carefully placed outside the stitching area) to hold the AquaFilm in place.
 - Use a design basting box, or a hoop basting box to further secure the AquaFilm. Slow the machine down to its slowest speed as the basting box is stitched. Using the foot control on your machine will also give you greater control.

To remove:

- Carefully tear away as much of the AquaFilm as possible.
- The remainder can be rinsed away with water.



Toppings

TopCover

TopCover is a vinyl type product that prevents the color of the fabric from showing through the stitches as well as controlling the nap.

It is Ideal for use when stitching light designs on dark fabric, or vice versa. The TopCover behind the stitches will remain there throughout the lifetime of the project.

To use:

- Place TopCover over the top of the hooped fabric. It does not need to be hooped with the fabric, but it does need to be secured.
 - Use Painter's Tape or pins (carefully placed outside the stitching area) to hold it securely.
 - Use a design basting box, or a hoop basting box to further secure the TopCover. Slow the machine down to its slowest speed as the basting box is stitched. Using the foot control on your machine will also give you greater control.

To remove:

- The needle perforations will make it easy to remove the excess. Tear away as much as possible.
- Tiny bits that cannot be torn away can be melted away with the tip of the iron. Be SURE to clean the iron after this use.

