

Fabrics 101 Stabilizer & Design Guide

When fabric is produced, manufacturers don't anticipate that anything will be added to it. When embroidering onto fabric, we're adding weight and tension of thread and stitches. The fabric needs to be stronger and more "stable" to support the stitches - and that is why stabilizer is used with every embroidery project.

If the fabric isn't stabilized properly, you'll see less-than-stellar results. You might find shifting and gapping, puckering, dimpling, and more. Choosing the right type of design and stabilizer for your fabric is the key to getting great results.

The [Fabrics 101 articles](#) are an excellent guide for your stitching projects, and you can find them all [here](#). This chart is a quick reference guide that summarizes those articles. Below you'll find the type of fabric, along with our recommendation for type of design, stabilizer, and needle. To read the full Fabrics 101 article for a type of fabric, click on the fabric name.

Fabric	Stabilizer/Backing	Design	Needle
Aida Cloth	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used.
Balsa Wood	Cutaway	Choose light designs, such as Redwork, toile, or vintage.	75/11 embroidery or universal needle
Batiste	Water soluble or tear-away	Choose light and open designs.	75/11 sharp needle. An embroidery needle may also be used
Broadcloth	Cutaway	Choose light designs, such as toile, vintage, Redwork, or designs with light and open areas.	75/11 sharp needle. An embroidery needle may also be used
Burlap	Cutaway	Choose solid, stitch-filled designs. Avoid light designs (they will get lost in the weave of the burlap).	75/11 sharp needle. An embroidery needle may also be used
Canvas	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used
Chamois	Cutaway	Any; but be cautious of running-stitch designs (like Redwork) that may get lost in the nap of the fabric.	75/11 sharp needle. An embroidery needle may also be used.
Charmeuse	Cutaway	Any, but consider draping (choose open designs for better draping).	75/11 sharp needle. An embroidery needle may also be used.

Chiffon	Water-soluble	Open, airy, and light.	75/11 sharp needle. An embroidery needle may also be used.
Cloth Diapers	Cutaway	Designs of any complexity will work well. Choose small designs or designs with open areas to avoid leaking	75/11 sharp needle. An embroidery needle may also be used.
Confetti Dot	Cutaway	If using a large design, choose open, airy, and light; if a small design, solid-filled.	75/11 sharp needle (necessary to penetrate the "dots")
Corduroy	Cutaway	Any for narrow wale; for wide wale, choose solid-filled designs (avoid running-stitch or Redwork designs).	75/11 sharp needle. An embroidery needle may also be used.
Denim	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used.
Faux Fur	Cutaway	Solid-filled designs; avoid Redwork or light designs.	75/11 sharp needle. An embroidery needle may also be used.
Faux Suede	Cutaway in most cases; tear-away with light designs	Any, but consider draping.	75/11 sharp needle (necessary for penetrating thicker fabric)
Faux Leather	Cutaway	Any, but consider draping (open designs will give the best draping).	75/11 sharp needle (necessary for leaving small perforations in the material)
Felt	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used.
Flannel	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used.
Fleece	Cutaway; tear-away may be used for simple and light designs	Any (but in some cases, running-stitch or Redwork designs may get lost in the fabric).	75/11 sharp needle. An embroidery or universal needle may also be used.
Gabardine	Cutaway	Any (but consider draping).	75/11 sharp needle. An embroidery needle may also be used.
Hemp	Cutaway	Any, but can depend on the weight of the fabric.	75/11 sharp needle. An embroidery needle may also be used.

Homespun	Cutaway or tear-away depending on the fabric blend	Light and open designs for cotton/poly blends, solid-fill designs for sturdier 100% cotton homespun.	75/11 sharp needle. An embroidery needle may also be used.
Jersey Knit	Cutaway	Low to medium complexity designs, or designs with open areas, will work best.	10/70, 11/75, or 12/80 sharp or embroidery needle.
Leather	Cutaway	Choose designs that have been digitized specifically for leather, or light and sheer designs.	80/12 leather needle.
Linen	Cutaway	Choose designs with open areas for best draping.	75/11 sharp needle.
Micro Pique	Cutaway	Choose light and airy designs for best draping.	75/11 sharp needle. Ball point and embroidery needles may also be used.
Microfiber	Cutaway	Choose small to medium-size stitch-filled designs.	75/11 sharp needle. An embroidery needle may also be used.
Minkee (Microfiber Plush)	Cutaway	Choose solid-filled designs; sheer or Redwork designs will get lost in the fabric nap.	75/11 sharp needle. An embroidery needle may also be used.
Moleskin	Cutaway; tear-away may be used for simple and light designs	Any.	75/11 sharp needle. An embroidery needle may also be used.
Muslin	Cutaway; tear-away may be used for simple and light designs	Choose light, open, and airy designs.	75/11 sharp needle. An embroidery needle may also be used.
Neoprene	Cutaway	Any.	75/11 sharp needle.
Nylon	Cutaway	Choose designs with light to medium complexity; applique is also a great choice.	75/11 sharp needle.
Nylon Pet Screen	Water-soluble	Choose medium-to-complex designs. Avoid light designs, such as Redwork, as those will get lost in the fabric.	75/11 sharp needle. An embroidery needle may also be used.
Organza	Water-soluble	Choose light, open, and airy designs.	75/11 sharp needle.

Outdoor Weather-Resistant (Sunbrella)	Cutaway	Any.	75/11 sharp needle.
Pashmina	Water-soluble	Choose light, open, and airy designs.	75/11 sharp needle. An embroidery needle may also be used.
Pique	Cutaway	Choose designs of any complexity, but consider draping.	75/11 sharp needle. An embroidery needle may also be used.
Polyester Shantung	Cutaway	Choose designs of low to medium complexity, but consider draping.	75/11 sharp needle. An embroidery needle may also be used.
Pre-Quilted	Cutaway	Any.	75/11 sharp needle. An embroidery needle may also be used.
PUL	Cutaway	Designs of varying complexity work well.	75/11 sharp needle (for smallest perforations)
Quilter's Cotton	Cutaway	Choose designs of low to medium complexity.	75/11 sharp needle. An embroidery needle may also be used.
Ribbon	Cutaway	Choose designs of low to medium complexity.	75/11 sharp needle. An embroidery needle may also be used.
Satin	Cutaway; tear-away may be used for simple and light designs	Choose designs of low to medium complexity.	75/11 sharp needle. An embroidery needle may also be used.
Sherpa	Cutaway	Solid-filled designs; avoid sheer or Redwork designs.	75/11 sharp needle. An embroidery needle may also be used.
Silk	Cutaway for heavier silk; tear-away for light and translucent silk	Choose light and simple designs for translucent silk; can use more complex designs with heavier silk.	75/11 sharp needle. An embroidery needle may also be used.
Spandex	Cutaway	Choose open designs, with light to medium complexity.	75/11 sharp needle. An embroidery needle may also be used.
Straw Hats	Tear-away or water-soluble	Any (but can depend on coloration of straw).	75/11 sharp needle.

Sweater Knits	Cutaway	Dependent on type of knit; choose light designs for tightly-woven knit, and more complex and filled designs for knits with a loose weave.	75/11 sharp needle. An embroidery needle may also be used.
Sweatshirts	Cutaway	Any (but consider draping).	75/11 sharp needle. An embroidery needle may also be used.
Taffeta	Cutaway	Choose open and airy designs for best draping.	75/11 sharp needle. An embroidery needle may also be used.
T-Shirts (Cotton/Knit)	Cutaway	Choose designs of low to medium complexity (consider draping).	75/11 sharp needle. An embroidery needle may also be used.
Towels (Tea, Flour Sack)	Cutaway; can use tear-away if using light or Redwork designs	Choose designs with low to medium complexity.	75/11 sharp needle. An embroidery needle may also be used.
Towels (Terrycloth, Linen)	Cutaway	For linen towels, choose designs of any complexity. For terrycloth, choose designs of medium complexity; avoid Redwork or running-stitch designs.	75/11 sharp needle. An embroidery needle may also be used.
Tulle	Water-soluble	Light designs with open areas (avoid Redwork or running-stitch designs).	75/11 sharp needle. An embroidery needle may also be used.
Velour	Cutaway	Designs of medium-to-high complexity. Avoid light or running-stitch designs.	75/11 sharp needle. An embroidery needle may also be used.
Velvet	Cutaway	Choose designs with medium to high complexity. Avoid light or running-stitch designs.	75/11 sharp needle. An embroidery needle may also be used.
Vinyl / Oilcloth	Cutaway	Choose designs with low-to-medium complexity. Avoid very complex designs.	75/11 sharp needle.
Waffle Weave	Cutaway	Choose designs with medium to high complexity. Avoid light, sheer, or running-stitch designs.	75/11 sharp needle. An embroidery needle may also be used.

Wool

Cutaway

Any, but consider the weight of the wool. For lightweight, choose light and airy designs for the best draping.

75/11 sharp needle. An embroidery needle may also be used.

Brands of stabilizer:

Each brand and type of stabilizer has strengths and weaknesses, and everyone has their favorites. Here's what we use:

Cutaway. Choosing a soft and pliable cutaway stabilizer (nothing stiff) will bring the best results, both during embroidery and during wear/use/laundry of the item as well. We use a 2.5 ounce cutaway called Soft-n-Stable made by Brother. We also enjoy a wide variety of the Floriani cutaway products (in particular, No-Show Mesh).

Tear-away. We get great results with Terradon Clean Tear, as well as Floriani tear-away products.

Water-Soluble. Vilene (a fibrous water-soluble product) is a dream to work with when making freestanding lace items. We've also used Sulky Ultra Solvy with excellent results.

Notes about needles: We prefer to use a size 11 sharp needle (not an embroidery needle) in all of our projects. A sharp needle has a fine and small point, whereas an embroidery needle has a rounded tip. A sharp needle will give a crisper and neater look to the stitches than an embroidery needle.

When embroidering and using a cutaway backing, you can use an embroidery needle instead of a sharp needle (the difference in the results will likely be negligible). However, if you are using tear-away or water-soluble stabilizer (for in-the-hoop or freestanding lace projects), always use a sharp needle. Using an embroidery or universal needle will rip, tear, or leave large holes in the stabilizer. That can cause misalignment issues, as well as thread looping, breaks, and other tension problems.

Questions or comments? Send us an email! The address is stitch@emblibrary.com.

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