



How to Avoid Puckering When Embroidering

It's happened to all of us. We spend hours searching for the perfect design, planning the placement, hooping, embroidering, changing thread, trimming jump stitches...only to find that when the fabric comes out of the hoop, it starts to pucker. It puckers just a little bit around the edges of the design at first, but then after the fabric is washed, the puckers get worse...and worse.

Seeing puckering in an embroidered piece is frustrating -- but the good news is, puckering is preventable. When working on a project, choose the design according to the fabric that you want to use, or choose your fabric according to the design that you want to use. Although most designs can be embroidered on any type of fabric, there are some exceptions based on the complexity of the design, and the strength of the fabric.

In preparation for this article I've spent many hours embroidering designs on different fabrics, using different stabilizers and hooping methods. The results of these tests show what causes puckering, and also how to prevent it.

To understand why puckering happens, and learn how to prevent it, we need to take a quick look at the "physics" of embroidery. Now if you're like me and didn't do very well in science class, don't be intimidated by the word "physics" -- keep reading! It will make sense, I promise.

When manufacturers make fabric, they don't expect anything to be added to it. But, when we add stitches with embroidery, those stitches add weight and tension to the fabric. The weight and tension pulls the fabric inward, making it contract.

There are two things that prevent us from getting an absolute mess when we add a design to fabric: stabilizer, and the embroidery hoop. Both work to keep the fabric flat and evenly laid when we're adding stitches to it. Both the hoop and the stabilizer work to counteract that "physical" contraction of the fabric when we're embroidering a design.

For the tests I wanted to use an intense design that had layering, shading, and satin stitches. I chose a realistic Dachshund design, which has 35,000+ stitches in it. Let's take a look at the first test:

Steps To Complete

Test #1

Because this design has a lot of stitches, layering, shading, and satins, I began with a sturdy fabric: medium-weight denim. Even though the denim is pretty sturdy, I thought I should start with my favorite backing, a medium-weight cutaway.



I chose this fabric/stabilizer combination because I thought it would be the best to support the stitches in the design. I hooped both fabric and stabilizer together, and added a bit of spray adhesive between the two so that they stayed together nice and tight.



After the embroidery finished I removed the fabric from the hoop and watched carefully for any puckers around the edges of the design. There were none. The embroidery laid flat, the fabric was even.



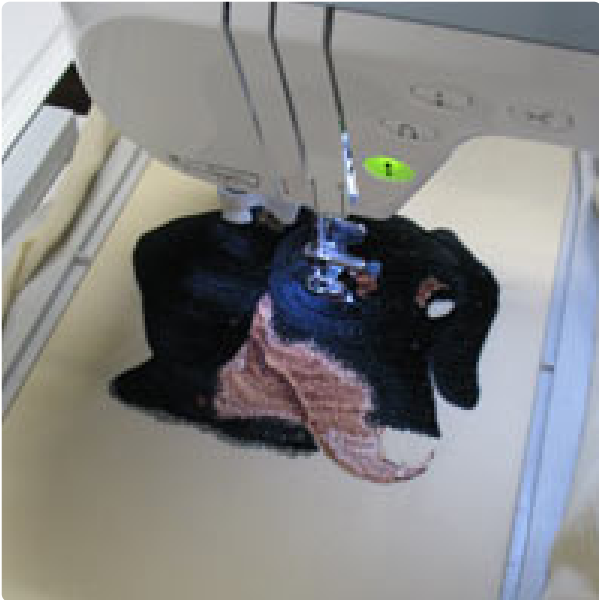
Test #2

Next I wanted to see what would happen if I used a lighter stabilizer. For the second test I embroidered the same design on the denim, but used a tear-away stabilizer for the backing.



When I removed the fabric from the hoop, I saw some puckering in the fabric -- not a lot, but enough to convince me that cutaway stabilizer is important when working with more complex designs.

Lighter designs -- designs with less layering, shading, and satin stitches -- will do great on denim with tear-away stabilizer, but heavier and more complex designs will need a cutaway stabilizer to avoid puckering.



Test #3

Next I wanted to use quilter's cotton, as it's such a popular fabric to work with. To begin, I embroidered the design on quilter's cotton with a tear-away stabilizer.



Quilter's cotton -- even a good-quality quilter's cotton -- is still a lightweight fabric, and just isn't strong enough for the layering and shading in the dog design. The tear-away stabilizer began to disintegrate during the embroidery (the needle perforations cause tear-away stabilizer to "tear away" during the embroidery, leaving nothing behind to support the fabric). That meant that the fabric contracted under the weight of the stitches, and when it was released from the hoop, began to pucker.

A lighter design did work beautifully with quilter's cotton and tear-away stabilizer, but more complex designs need a sturdier fabric, and a sturdier stabilizer.



Test #4

Next I embroidered the design with quilter's cotton and cutaway stabilizer



After the design had finished and I unhooped the fabric, there were puckers. When working with complex designs, choose a sturdy fabric. And, when embroidering on a lighter-weight fabric, like quilter's cotton, choose lighter, less complex designs.



For this particular design, the best results are with medium-weight fabric, and cutaway stabilizer.

What I found with these tests is this: When the fabric is too light, the stabilizer too weak, or the two not hooped tightly enough, the fabric underneath the design contracts under the weight of the stitches. And that's when we see puckering.

Does this mean that we're doomed to always embroidering on denim, canvas, and duck cloth? Nope, absolutely not.

When you're working with complex designs, those that have layering and shading and satin stitches, using a medium-weight fabric and a cutaway stabilizer will give pucker-free results. But, when you're working with lighter designs, designs that have less layering and shading, then your choice of fabric is wide open.

There's one more thing that can cause puckering, although this is not very common. Sometimes if the bobbin tension is too tight, you'll see puckering. This happens because the bobbin thread actually pulls the fabric down. If you've tried every fabric and stabilizer combination that you can think of and you're still seeing puckering, loosen your bobbin tension just a tiny bit, and that should solve the problem.