

## Flesh Tone Inserts

Many outfits have unrealistic designs. Consider adding a flesh-tone panel to help with structural stability and/or modesty.

Add modesty and stability to cut-outs along torso, arms, or legs.

Use flesh-tone fabric to attach thigh-highs to shorts/spunks to keep them from falling down.

Hold straps in place by attaching them to a flesh-tone fabric sleeve or stocking.

Paint / attach fake tattoos or skin designs onto flesh-tone fabric.

## Soft Armor

To make smooth, shiny armor pieces, you can use metallic spandex, stretch vinyl, or pleather over craft foam.

Cut a piece of fabric slightly larger than your armor piece (for complex shapes with bends or concavity, you may need to add seams in the fabric first).

Stretch the fabric over the craft foam.

Use contact cement to glue the fabric to the craft foam.

Wrap the fabric edges around the foam and glue to the back. Be sure to keep the fabric smooth. Cut notches in the fabric to go around corners or curves (you don't have to finish the edges, as these fabrics won't unravel).\*\*

\*\*For a very clean edge, add a facing to the fabric before gluing it down, then fold the facing to the back and glue it in place.

You can also cut designs or edge trims out of coated stretch fabrics like vinyl or pleather and glue or sew them onto your armor or other fabrics.

## Buying Materials

### Fabric

Spandex World: [www.spandexworld.com](http://www.spandexworld.com)

Blue Moon Fabrics: [www.bluemoonfabrics.com](http://www.bluemoonfabrics.com)

Local fabric stores (JoAnn's now carries a lot!)

Most online stores allow the option of buying samples. These are cheap, so buy them! It's hard to gauge fabric thickness, stretch, and color from a computer monitor.

### Patterns

[www.specialtysportswear.com](http://www.specialtysportswear.com)

Kwik Sew K3052

YaYa Han has several bodysuit patterns as well

Using the patterning method outlined here, you'll only need 1 pattern rather than a separate pattern for every bodysuit. By drawing the seams on, the new pattern is 100% customizable. Find a bodysuit pattern you like, and take good care of it so it can be used multiple times.

Make sure if the pattern calls for a 4-way stretch, you're using a 4-way stretch. If using only 2-way, you'll need to make the pattern bigger in the non-stretch direction.



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## Sewing with Stretchy Fabrics

*By the Cosplay Repair Station*

Stretchy fabric is super useful! Use it for form-fitting outfits and to provide comfort. Stretchy fabric is essential for gloves, leotards, bodysuits, and many other applications. It can even be used as a lightweight armor by being stretched over a foam base.

### Types of Fabrics

Stretchy fabric is either 2-way or 4-way. 2-way fabric stretches in only one direction, while 4-way stretches in both directions.

Note: ALL fabric will stretch along the bias (45 degrees). Bias tape is made from cotton cut along the bias!

Because of the spandex content, most stretchy fabrics CANNOT be ironed and must be washed COLD and then LINE-DRY.

Common stretchy fabrics include:

- Stretch vinyl / Stretch pleather (90% polyester, 10% spandex, with a PU coating)  
A PU coating on top of a polyester spandex fabric. Good look for pilot suits, gloves, boot covers, and armor.
- Stretch velvet (90% polyester, 10% spandex)  
Typically 2 way stretch.
- Spacer (85% polyester, 15% spandex)  
Thick material used for insulation.

- Cotton Lycra (92% cotton, 8% spandex)  
Softer, slightly thicker knit that is easy to work with.
- Milliskin (80% nylon, 20% polyester)  
Medium-weight knit (similar to the base layer of stretch vinyl or pleather).
- Glissenette (90% nylon, 10% spandex)  
A very fine mesh fabric that is sheer and often used by ice skaters and gymnasts. Sometimes called illusion fabric.
- Satin Spandex (90% nylon, 10% spandex)  
Medium weight spandex with a shiny satin finish. Typically 2-way.

### Patterning Stretch

1. Sew a simple mock-up (can be only one side if the piece is symmetric). Use a fabric with the same type and amount of stretch as the final costume, i.e. don't use a cotton mock-up for a pleather bodysuit. Use a basic pattern just to get the shape right.
2. Draw new seams on the mock-up. For stretchy fabrics, it's best to draw the seams while the mock-up is being worn or on a dressform.
3. Cut out each new pattern piece.
4. Trace pieces onto pattern paper. Be sure to label each piece, including which direction to orient the piece on the fabric to ensure the proper stretch.  
Brown packing paper or architecture paper work well as sturdy pattern paper.
5. Create instructions—this step is optional but really useful if you have a lot of small pieces.
6. If the pattern is very complex, consider sewing a second mock-up to ensure fit. Make adjustments to the pattern as required.
7. Start cutting your final fabric! Keep track of which pieces are which.

### Cutting

When cutting stretchy fabrics, consider cutting single layer to make sure the pieces don't slide as you cut.

For fabrics with a PU coating:

Use weights to hold the pattern in place, trace with chalk or a pencil, then cut out the pieces.

Use blue tape or clips to hold pattern pieces in place while sewing.

*Don't pin through fabrics with a PU coating!* Just like regular vinyl or pleather, the holes will never go away.

### Sewing

Option 1: use a knit/stretch stitch (looks like a lightning bolt) or a narrow zig-zag stitch. This allows the sewing to stretch but will still lay flat when opened.

Option 2: use a straight stitch with a long length and looser thread tension. This will not be as stretchy as option 1 but is a good choice for top-stitching where appearance is critical.

Option 3: use a serger with a 3-thread overcast stitch (left needle only). Adjust the differential feed so as not to stretch the fabric while sewing.

*We recommend the Brother 1034D serger.*

For your sewing machine, use polyester thread instead of cotton thread, as it will stretch more. For your serger, use nylon thread.

If your machine has adjustable presser foot pressure, make sure this is set to low to avoid pulling the fabric as you sew. Sew seams in the same direction to prevent uneven stretching, similar to sewing silky fabrics.

Sewing coated fabrics requires extra steps as the coating will be sticky!

Place tissue paper between the coated fabric side and the presser foot or feed dogs. Sew through the paper, then tear it away once done.

Put blue tape or scotch tape along the bottom of the presser foot to help it slide over the coating.

Don't back-stitch (to prevent adding extra holes). Instead, tie off threads.

*Tip for sewing gloves:* use the uncoated selvage edge of the fabric to sew the gusset between the fingers. It won't be visible unless your fingers are splayed, and it's much easier to dart and sew along the inner finger curves.

### Adding Structure

Parts of stretchy outfits will still need reinforced structure, just like non-stretch. Common areas are cuffs and collars, straps, large openings, and attachment points (ex zippers).

Stretchy fabric is stretchy! To maintain a specific shape or prevent large cutouts from sagging, sew a non-stretch fabric, ribbon, or interfacing into the portion that needs to be maintained.

When sewing zippers, be sure to sew both sides of the zipper in the same direction.

Use dense foam and felt to add 3-D structure to stretchy garments. But keep in mind that these areas will no longer stretch. For example, adding piping along a body suit will prevent the suit from stretching unless the piping is stretchy.

Outfits that don't look stretchy can be made out of stretchy fabric to be more comfortable and form-fitting. You can reinforce stretchy fabric to make it non-stretchy, but you can't make non-stretch fabric stretch unless it's cut on the bias.