

TIPS FOR USING 3-D FOAM

There are just a few boundaries to keep in mind when evaluating a design for 3-D foam. First, the type of garment or finished product you're working with. Stay away from unstable fabrics such as pique. The more stable the fabric the better the results will be. Foam can be used successfully on denim, sweatshirts, jackets and caps, as well as aprons, bags and any other similar stable surface.

Secondly, the portion of the design that will take on the 3-D effect must be the last, or only section to be sewn. As you will be laying down an opaque piece of foam over the design, so all flat sewing must be completed beforehand. The needle penetrations perforate the foam and allow for the excess to be pulled away upon completion of sewing.

By placing a stop command after the last section of flat embroidery is completed, the machine operator is able to position the foam and then begin the final sewing.

In addition to being the final, or only section to sew, the segment of the design that will take on the raised appearance must be hefty enough to allow the foam to work its magic.

Larger solid fields may be enhanced with the 3-D look in one of two ways. Overlapping satin stitches by a couple of millimeters will render the raised effect. This process is the most widely utilized fashion of filling sizable areas in a design. It is important to keep the stitch direction fairly consistent as you place satin next to satin for the finest look.

After evaluating the design and determining where the 3-D application will work, the next step is digitizing it. After completing the areas that will be flat embroidery and inserting a stop command to allow the machine operator to position the foam, the 3-D portion can begin. Underlay is the most important factor with this application.

The finer the satin, the less the underlay will be necessary, if at all. The broader the satin, a single- or double- run underlay can be utilized along the outside edges of the satin, as it helps cut the foam. Zigzag or cross-stitching underlay should not be used, as they tend to defeat the elevated look of 3-D and work to compact the foam. Since it is the needle penetrations that perforate the foam, special attention must be given to the ends of each satin. You may want to go in and manually place the run stitches as needed to provide the finished look. This process is commonly known as "capping off". An alternative would be to taper off or pinch the ends of the satin stitch. Placing the point/counterpoint of the satin .5mm apart, the foam perforates nicely. Depending on the aesthetics of the design, it is, ultimately, digitizer discretion that should determine the use of the capping off verses the pinching technique.

Satin density is a chief factor in the 3-D application since it is the needle penetrations that puncture the foam. By increasing the density 100 percent on the satin areas that will be covering foam, the finished product looks the best. This increase in density will elevate the total stitch count by approximately 20-25 percent.

There are a couple of tips for when the design hits the embroidery machine. Opening up the tension a bit on the areas taking the 3-D foam is helpful. Running the machine at no more than 800spm will help insure accurate needle penetrations. Ball point needles, as opposed to sharp needles cut foam the best. The bottom line is to use a needle that best supports the fabric in which the design is being sewn upon.

As the needle penetrations are perforating the foam, there will be residual foam flakes that tend to clog up your embroidery machine. Removing the throat plate and keeping the area free of debris after each shift of running 3-D foam will allow the machine to function its best.

If, after removing the excess foam, remnants remain between the stitches, there are ways of cleaning this up. Using a pressing cloth between the embroidered piece and a hot iron, hold the iron for a couple of seconds. The remnants will melt and shrink under the topstitching. A heat gun can also be used. Note: The 3-D foam made specifically for embroidery is NOT flame retardant, making it unacceptable for children's sleepwear.

For an even more pronounced 3-D look, you can stack two pieces, just remember to compensate for the additional height. Experimenting is key to getting the look your after. Adjusting tensions, stitch lengths and density may be needed to achieve the correct 3-D look, but in many cases this extra effort can pay off with stunning results.

MORE TIPS

Avoid excessive Zigzag underlay - Designs should have a double edge walk underlay.
Keep foam thickness around 3/16" to 1/4" for best results.

A ball point needle leaves a slightly larger hole than a sharp point, perforating the foam cleanly.

A sharp point works as well, but the bottom line is to use a needle that is required by the fabric. Relax tensions so as not to overly compress the foam material.

Simplify shapes whenever possible to keep elements more rounded, rather than sharp, and keep columns as wide as possible.

The color of the 3d foam should be the same as the thread color that you are covering the foam to avoid foam material to show through.