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## **3D EMBROIDERY**

3D embroidery involves two distinct and innovative techniques used within the custom embroidery field to add dimension to many designs. Layered 3D embroidery is achieved by increasing the stitch density of a design and/or by adding successive layers of stitching to certain areas of a design. This makes the design thicker and raises the design away from the surface of the garment. This technique can incorporate more detail than "puff" embroidery (see below), but for highly intricate designs standard embroidery is best. Finally, this technique works best with thinner materials that will be washed regularly, such as oxfords, polos, and sweatshirts.

Puff embroidery is a somewhat more complex and labor intensive process that uses a 3mm.-6mm. foam underlining beneath the stitching to achieve a more extreme three dimensional effect. The foam comes in an array of colors and thicknesses to accommodate a variety of products and thread colors. As with layered 3D embroidery, puff embroidery involves specialized digitizing skills and techniques. The outline for the design to be "puffed" is generally stitched onto the garment to enable proper placement of the foam. A machine "stop" is then usually programmed into the digitized embroidery file to enable placement of the foam sheet. The embroidery machine will then tack down the foam with satin stitches and the remaining shape of the design is cut out of the foam as it is covered with a thick layer of satin stitches. A puff design requires approximately twice as many stitches as a standard embroidery design. Excess foam is removed by hand, sometimes leaving small residual shreds that emerge from the stitching which can be hidden by shrinking them with a heat gun. Puff is most commonly seen on hats but lends itself to placement on any sturdier material that is washed only periodically.

Not all designs are appropriate for puff or layered 3D embroidery. Say it in Stitches can assist you in making the best design decisions to provide you with a beautifully digitized, high-quality custom embroidered garment at a price that makes sense for you.