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Academy of Screen & Digital Printing Technologies

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# **Printing Fleece**

When cooler weather arrives, the demand for printing on fleece increases. Printing on fleece, especially on dark colors is not very difficult, but should not be handled the same way as a t-shirt, nor should the artwork be set-up exactly the same way.

Artwork considerations. Since fleece has a thickness, the top of the fabric could move while being printed. While separating the artwork, the underlay should be chocked or made skinner so the possibility of the underlay showing through is reduced. As for the rest of the colors, they should be handled the way they would be for printing t-shirts.

Screen mesh counts and tension. This is an area that gets a little trickier than usual. The knit pattern for most fleece is courser that on t-shirts so the need to go to a courser mesh exists. For an underlay for dark colors, I like to use a mesh count or 110-156. The big trick here is to bring the tension up so the pressure of the squeegee is on the mesh and not on the shirt. A tension of no less than 30 N/cm is good. The higher the tension, the less pressure is required from the squeegee and the easier it will be to keep the ink on top of the garment and reduce the need for double strokes to get a vibrant underlay. The mesh counts for the colors printing on top of the underlay should be about 230 with 40 N/cm for tension. The ink for these screens could be straight out of the can or reduced with SHAPE by 30%. I prefer using high opacity ink straight out of the can, so I don’t have to have a separate can to put the leftover ink into for storage.

Squeegees can make a difference. The squeegee should be very sharp and straight. The sharp squeegee will sheer the ink and give a smooth looking print. I like the use of a 65/90/65 triple durometer squeegee or a 70-75 durometer single. The big thing is sharp and straight. Finding the right angle will give a good deposit of ink and keep the edges sharp and crisp.

Flood bars can assist in faster production. One of the tricks is to have pressure on the mesh from the flood bar. This loads the ink into the mesh and gives a brighter appearance than using the flood bar the traditional way of having it just push the ink forward. The downside is the increased pressure could rip the screen if you’re not careful. Another option is to us a Stretch Devices Hydra flood bar. To use it correctly, it has to be set at the correct angle, have pressure on the screen and flood as fast as possible. The fast flood forces the ink into the mesh and the results are a very vibrant print with one stroke that prints faster than any other color. Since the speed of production is often dictated by the speed of the under, and in this case the underlay will print faster than the other colors, productivity will increase. It does take a little work getting the angle correct, but the results will be an underlay that looks like it was double stroked.

The ink for printing on fleece should be the same as for t-shirts except the underlay. Since most fleece is a poly/cotton blend, using a low-bleed ink is important. The ink printing on top of the underlay could be the same that is used for all cotton fabric since the underlay will shield the ink from the polyester and the colors will hold true.

The big trick with fleece is the temperature of the flash unit. Most printers use an excessive amount of temperature to flash. There are two problems that arise for excessive temperature. First there is a potential of the inks being printed on top of a cured underlay not fusing together when the garment is sent through the dryer. If the dryer is run very hot, the ink on top could bubble and the print coming out of the dryer will be pitted. The second problem caused by excessive heat is the garment moving. Because the fleece is thick, the adhesive holds the part touching the pallet. The remainder of the fabric is not being held and the excessive heat will shrink the top layer and the print will be out of register. The flash temperature should be 230-250 degrees on the garment. Check the temperature with a Ray Gun. By keeping the temperature down, it may not be necessary to have a cool-down station after the flash and that could allow for more colors to be printed.

Many prints now require a lot of flashing because of the special effect inks being used. Although the inks flash fairly fast, they don’t always cool-down very quickly. If there isn’t room for a cool-down station and the flash temperature is as low as you can go, another option is to spray silicone on the print after the flash but before the next screen comes down. The silicone will cool the print and stop the ink from sticking to the next screen. There are automated silicone sprayers available that will work with any automatic, since they are triggered by motion detectors and do not require being wired into the press itself.

The last item to look at is the adhesive for holding the fleece in place while it is being printed. Many printers use an excessive amount and spray after every garment. Often the inside of the garment picks up the adhesive because it is still wet, and additional handling and clean-up is required. One way to reduce this problem is using a liquid adhesive instead of the spray adhesive. By putting several layers on the pallet and flashing between the layers, enough adhesive will be on the pallet to not have to add more on a regular basis. When the adhesive stops holding, a damp rag will remove the lint and re-activate the adhesive. Since the adhesive is dry, it will not come off on the inside of the garment. One thing to note is the first piece of fabric on the fresh adhesive will be very difficult to remove and will probably be distorted while trying to get it off. Use a scrap for the first print then use the actual garments for the job will help.

Following the above recommendations should make printing fleece faster and almost as easy as printing t-shirts.