PRINTERS & DECORATORS

Please read
Performance apparel is one of the fastest growing segments of the apparel industry. Most of the performance garments are made with synthetic fabrics such as Polyesters and Nylons. With the growing interest in performance apparel, many printers and decorators are falsely applying the same traditional techniques and processes that are commonly used for printing cotton. With a few small and crucial adjustments depending on your printing equipments and dryers, you should be able to print on performance apparel and like many other printers build a profitable business in this growing area of wearable market.

Run pre-production test

If you have not printed on polyester before, please test before running a production. Never switch from cotton to polyester without reconfiguring your press, inks and dryer and other equipments set up. Even if you have experience decorating synthetic garments, always run a pre-production test.

You need to adjust the temperature, height and the dwell time of your flash cure unit and dryer. A temperature of 240-250 F for flash cure unit and a temperature of 270-300 F for the dryer are recommended. A shorter dwell time is also recommended. You may need to slow down the belt for thicker ink deposits. Under curing may result in poor wash fastness and can cause dye migration. We recommend that printers monitor the temperature several times during the course of printing polyester since overheating the fabric may also result in dye migration. Avoid curing the garments at temperatures above 320°F level. Heat often activates the dye migration process. Use a low-cure additive that lowers the curing temperature of the ink and can help prevent the dye from migrating. Always test fabric for dye migration prior to a production run, several days in advance if possible. Print a white or light-colored ink onto the fabric and then check for any dye migration.

We recommend polyesters; especially dark colors to be printed on fine mesh count screens. This count will give you a nice, thick appearance as well as an ink film strength that will last longer. The use of lower mesh count screens will offset higher viscosity of poly white inks. The use of poly ink is recommended. Always apply a good base white made for polyesters.

A high and sudden surge of temperature may cause polyester to compress. Therefore, Printers are advised to monitor temperatures constantly. The thickness of the ink and the print coverage should be of important consideration in printing synthetic garments in order to apply the proper temperature and dwell time.

*Expert Brand will provide fabrics free of charge for testing purposes only.
** Always test a few garments and test for dye migration and measure the width and the length of the garments before and after printing.

The above information is only to be used as a guideline. It is not binding in any way or form. We do not accept any responsibility for its content, any application, or processing methods. You must reconfigure your press, inks, and dryer and other equipment setups in order to successfully print and decorate performance apparel.

We are ABSOLUTELY not responsible after the garments are embellished, decorated, printed, changed or processed from the original form. Expert performance T makes no warranty of fitness or merchantability of the garments for any specific purpose. We strongly recommend that you test a few garments to examine for your and your customer specific purpose and suitability of your and your customer intended use before running the whole production. Please check immediately as no claims are accepted after five days of receipt of garments. Shortages and other discrepancies must be reported to our offices in writing immediately.
To ensure cure:
- Full ink film must reach 290 F
- Multiple passes over 300 F will result in dye migration into the ink film.
- Ovens must be maintained and tested to guarantee full cure.
- Map Ovens

Oven Mapping (to ensure cure)
- Place Crosshairs of the Thermo-Probe into the wet ink
- Record Temperature in 5 sec intervals
- Mark corresponding dots onto Temp/Time sheet
- Connect the dots to view the “Cure curve”

Under-Base Gray
Mesh - 140 Mesh
Squeegee – 80 Durometer
Squeegee Pressure –60psi
Squeegee Angle –20 Degrees
Print Speed – Medium to Medium Fast
Flood Angle – 0 Degrees
Flood Height – Just above stencil
Flood Speed – Medium to Medium Slow
Quartz Flash – Set to 3-4 Seconds when printing on Cold Pallets
- Once pallets are warmed up in production run or if pre-heated prior to run the time can be shortened to 2 – 2.5 Seconds.
- Flash Temperature for this ink is approximately 180F-220F

White
Mesh - 125 Mesh
Squeegee – 70 Durometer
Squeegee Pressure –60psi
Squeegee Angle –15 – 20 Degrees
Print Speed – Medium to Medium Fast
Flood Angle – Approximately 0 Degrees
Flood Height – Just above Stencil
Flood Speed – Medium to Medium Slow
Quartz Flash – Set to 2-3 Seconds when printing on Cold Pallets
- Once pallets are warmed up in production run or if pre-heated prior to run the time can be shortened to 2 – 2.5 Seconds.
- Flash Temperature for this ink is approximately 180F-220F, over-flash may cause color shift in overprint colors.

Over-printing a base
Mesh - 180 Mesh
Squeegee Durometer – 70 Durometer
Squeegee Pressure – 50 psi
Squeegee Angle – 20 Degrees
Print Speed – Fast
Flood Angle – 0 Degrees
Flood Height – Just above Stencil
Flood Speed – Medium to Medium Slow
Quartz Flash – Set to 2 seconds when printing on Cold Pallets
- Once pallets are warmed up in production run or if pre-heated prior to run the time may be shortened.
  - Flash Temperature for this ink is approximately 180F-220F
  - This is final flash for tack only and may be shortened to 1 second or less, over-flash may cause color shift.

If color is too light (over-printing a base):
- Increase squeegee angle
- Increase print speed
- Decrease squeegee Shore A durometer
- Increase pressure
- Decrease screen mesh count

If color is too dark (over-printing a base):
- Decrease squeegee angle
- Decrease print speed
- Increase squeegee Shore A durometer
- Decrease Pressure
- Increase screen mesh count

Direct to garment
Mesh – 180 - 230 mesh
Squeegee Durometer – 80 Durometer
Squeegee Pressure – 50 psi
Squeegee Angle – 20 Degrees
Print Speed – Fast
Flood Angle – 0 Degrees
Flood Height – Just above Stencil
Flood Speed – Medium to Medium Slow
- Quartz Flash – Not necessary, wet on wet printing is recommended.

If color is too dark direct to garment:
- Decrease squeegee angle
- Decrease print speed
- Increase squeegee Shore A durometer
- Decrease Pressure
- Increase screen mesh count to 230