



Basics

- “Flags and Banners” is a synonym for advertisement products for indoor or outdoor use.
- The materials are mostly made from PES or PA (Nylon) fibre.
- PES or PA (Nylon) fabric has many advantages compared to printed film or PVC coated material.
 - Lighter in construction, saves resources and energy during manufacturing
 - Suitable for penetrated prints (flags)
 - Light weight
 - Solvent-free
 - Foldable without stress whitening (breaking of the image)
 - Easy shipment to the customer
 - Fabric can easily be recycled after its use
- Promotion articles are made from woven or knitted flag fabrics, canvas, sateen, deco, front-light, backlight, nonwoven, fleece and other material.
- These products are typically used for exhibition, booth or shop decoration, event management, community or institutional identification, and many more.
- On flying advertisement material (flags), penetration is most important: Identical image on frontside and backside, at light and dark colors, is essential.

Outdoor use demands high weathering fastness, achieved best with high-energy direct disperse inks.

Printing Methods



Printing on PES fabrics

- PES fabrics are printed with 100 % water based, ecological, disperse digital inks.
- PES fabrics are most popular in Europe, the Middle East and Asia. They are printed with disperse or sublimation inks.
- Nowadays even the US and Canadian markets demand for more PES direct-to-fabric printing.

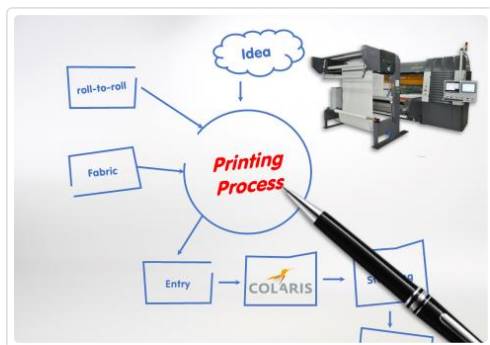
Printing on PA (Nylon) fabrics

- In the USA and in Canada printing on PA fabrics is still quite common.
- Governmental institutions incl. Army, Air Force and Navy as well as many NGO's still prefer the highly durable PA fabric, especially for national and institutional flags.
- PA fabrics require acid inks, which are 100 % water based.

Printing Process

Graphics

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- Inkjet pre-treatment for the fabric
- Printing with **COLARIS**
- Ink fixation process
- Washing process of the fabric for highest ink fastness properties

Printing of PES fabrics

- Fabric must be prepared for digital inkjet printing – mostly by a padding process on a stenter
- Printing with **COLARIS**, using direct disperse or direct sublimation inks
- Post-print drying - inline right after printing

Offline Process

- HT steam fixation in a loop steamer for 8 to 10 minutes
- Reductive washing and vacuum extraction for high light and weather fastness

Options

- Inline inkjet pre-treatment, applied by the **CHROMOJET** digital pre-coating unit
- Penetration enhancement with [SUPRAPRESS](#)
- Inline fixation for about 4 minutes

Printing of PA (Nylon) fabrics

- The fabric must be prepared for digital inkjet printing – mostly by a padding process on a stenter
- Printing with **COLARIS**, using water based acid inks
- Post-print drying - inline right after printing

Offline Process

- Fixation with saturated steam at 102°C / 216°F in a loop steamer for 30 minutes
- Washing and vacuum extraction

Options

- Inline inkjet pre-treatment, applied by the **CHROMOJET** digital pre-coating unit
- Batch job ink fixation (discontinuous process) by pressurized steam at 130°C / 266°F for 45 minutes, for maximum color yield and best possible penetration.
- Penetration enhancement with [SUPRAPRESS](#)
- Inline fixation for about 6 to 8 minutes

Pigment printing

- Printing is possible on any kind of substrate
- Good penetration can hardly be achieved – not really suitable for flag printing
- Fixation is easy: only hot air curing is required

Printing machines

The printing machine must offer working widths of 2,600 or 3,200 mm to process the dimensions of these products.

Graphics

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Mostly, four and five color setups are used. Up to eight color setups are available for special products.

- For high-volume print production we recommend **COLARIS.PRINTERS** with FUJIFILM Dimatix StarFire™ print heads.
- The ReadyJet™ ink circulation system guarantees sufficient ink availability at any working condition.
- The ink circulation system prevents the sedimentation of solid ink particles.
- An integrated workflow from design through printing, automatic cutting and confection is important for a flexible and economical production.
- **COLARIS.PRINTERS** printers with “stroke-by-stroke” design management allow the printing of large format images.
- “Design Nesting Function” is recommended to achieve limited material waste.
- Our open ink system allows the creation of spot colors for special needs.

Get more information in our PDF's: