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## filmoprint® systems for inkjet printing

The brandname filmoprint, stands for tested and approved quality products and product systems for solvent inkjet printing. For many different indoor or outdoor applications Neschen here developed filmoprint, Quality certificates

Available filmoprint®-Quality Certificates:

cast print outdoor system 5  
performance print outdoor system 5  
easy print outdoor system 2

Please ask for personal certificate under: Fax ++ 49 (0) 5722-207-197 e-mail: Info@neschen.com

## General advice for using PVC media on solvent inkjet printers

### Solvent Inks

The solvents used in inks are designed for rapid evaporation allowing the image to dry quickly. Another function of the solvent is to allow the ink pigments to bite into the printed surface by softening the PVC. Inks with a very high solvent content or prints with high ink loads can damage PVC media to a point of ruin. Heavy solvent loads can also permeate the film and adversely affect the adhesive. This is mostly true for print media with solvent based adhesives. Neschen produces a non-solvent poly-acrylic adhesive for some of its more popular styles of media that resists this type of deterioration.

### Inklimits and ICC Profiles

Profiles for Neschen media can be accessed from our web site at [www.neschen.com](http://www.neschen.com). We try to provide profiles for the most popular rip/printer/media combinations. It is strongly advised to prepare test prints in situations of excessive ink loads of 200% and higher. The high concentration of solvent may damage the media.

## Drying

### *Drying while printing*

An additional variation of the printing result can be achieved by printers with a two-step heater (pre-heating and drying such as with a Vutek printer), or with printers having a variable heater in the printing head. The influence of a printing head heater is considerable. An increased temperature in the proximity of the printing head leads to quicker primary drying and decreases the spreading of the ink drops. This increases the image sharpness but can, under certain circumstances, lead to an inadequate colour saturation (e.g. grey instead of black). This problem can be counteracted by either reducing the temperature in the printing head or by introducing an artificial sharpness in the Raster processing step (e.g. with a double-dot combination in the RIP) or with an analogue measure in the printing process (e.g. Double Strike by Vutek).

The maximum temperature limits are to be strictly adhered to, both in the printing head, and, if applicable, on the separate drying unit. The temperature range is generally between 50°C - 60°C (120°F – 140°F) for monomeric material and 60°C – 70°C (140°F – 160°F) for polymeric material. The temperature setting is also influenced by other factors such as the penetration time of the ink and the transport speed of the printer. Waves in the material and extreme shrinkage are characteristics of thermal overloading of PVC-film. Extreme thermal overloading is characterised by browning of the material and a strong plastic odour. Additionally, overheating of the print media can result in a softening and stretching of the material on the printer. An immediate decrease in temperature is imperative should any of these phenomenon occur.

### *Drying after printing*

As mentioned above, considerable interactions can occur between the solvent in the inks and the PVC print material. These, in principle, harmful effects are subject to a variety of factors such as penetration duration, ink concentration and the type of solvent used and are therefore very difficult to predict. You can however minimise these harmful effects by adhering to a few rules of thumb, to ensure an optimal printing result.

- a) The only way to ensure a stable, high-quality print, in a reasonable time-frame, is to choose a balanced compromise between the necessary colour and solvent coating and the desired colour saturation level.
- b) Every minute of open drying time is advantageous

Our experience shows that these two rules cover a number of general recommendations. For instance, the roll-to-roll processing, touted by many machine manufacturers, can in reality find only limited use. The drying time available during this process, even with maximum drying settings, achieves only a surface drying. The physical properties of PVC do not support the use of the maximum drying settings which increases the surface drying effect. The solvent residue under the surface of the PVC has no means to evaporate when the material is rolled and this can lead to softening, blemishing and blocking of the material. These characteristics vary from producer to producer and material to material. These assertions are very easy to prove. Simply take two freshly printed images and leave them overnight beside each other with one rolled up and the other flat and then compare the physical properties. The laminating of improperly dried images also results in the sealing in of solvent, which in turn can cause blistering in the laminate, the bleeding of colours, increased shrinkage, waviness and softening and transformation of the adhesive with a correspondingly poor adhesion.

We therefore strongly recommend an adequate drying time, preferably overnight in an open manner, before processing solvent inkjet images. The post drying should occur as soon as possible after the printing process. This means that material printed roll-to-roll should be unrolled as soon as possible after printing and left to dry. Roll-to-roll printing overnight should be avoided in order to keep the time period in which the material is rolled to a minimum.

If roll-to-roll processing is unavoidable, we then recommend that the material be stood upright in a heated room. The roll should be loosened somewhat to allow air movement between the various layers. This precaution is adequate in many cases. An indicator for adequate drying is the absence of notable evaporation of solvent from the print, as well as the return of the material stability to the level before printing (can be compared to an unprinted edge). The best rule of thumb is drying overnight!

The printing room, as well as all storage rooms, should always be well ventilated



## Laminating

We strongly recommend that the image film and the laminating film be of the same quality (monomeric, polymeric, see below). Adequate drying time must be strictly observed as to avoid absorption of the solvent into the protection film. The image should be laid flat for approximately one hour after lamination, in order to achieve the optimal adhesive characteristics between the laminating film and the image carrying film. When transporting, the images should be rolled in as large a diameter as possible, in order to avoid faults.

## Application

Performance print products are designed for different applications and surfaces. Be sure to read the associated technical data to ensure the products you select are suitable for the project intended. Once the proper combination of materials has been selected and fabricated the surface to be applied to must be properly prepared. For successful applications the surface should be clean, dry, smooth and non-porous. Take care to remove any contaminate such as grease, oils, silicone, wax, salt and grime.

## Special note

When using filmolux, easy print 70/100, in combination with filmolux FGS, for floor graphics applications, it is advisable to read the processing instructions for the filmoprint, Floor Graphics System.

Additionally, it is advisable to read all technical data sheets for products used, as well as paying special attention to instructions regarding laminating and mounting found in this catalogue. Should you require any further information, our sales employees are always at your disposal

## Guarantee

Please ask for the filmoprint Quality Certificate.

