



klöckner pentaplast

white paper

AN OPTIMIZED SHRINK SLEEVE FILM FOR HP INDIGO LABEL PRINTERS – IG10T22 Y460 PETG DIGITAL PRINT SLEEVE FILM

PROBLEM STATEMENT:

Creating shrink sleeve labels with an HP digital press creates a host of challenges for the label manufacturer. From printing and seaming through label application, special film and processes will be necessary to achieve good results. Very few suppliers have offered substrate solutions to the shrink label printer who chooses to print on an HP Indigo printing press.

EVIDENCE PROBLEM EXISTS:

Only films that have been 'optimized' for the HP process can be successfully used with Indigo printing presses. Rochester Institute of Technology (RIT) performs independent testing to certify a material will function in Indigo presses.

SUMMARY:

Digital printing presses such as the HP Indigo utilize a toner based ink. To facilitate the anchorage of the ink to a variety of films, the film must be coated with a specific treatment. It is this coating layer that challenges many of the downstream processes in conventional shrink sleeve label manufacture.



Klöckner Pentaplast's coated film, IG10T22 Y460 PETG, was tested by RIT for HP Indigo compatibility. The material was certified with a rating of 3 stars from a maximum of 3 stars. Printed film was then topcoated with an overprint varnish and seamed using equipment frequently utilized in the industry. In concert with Accraply Stanford and Karlville Development technicians, the special steps required to achieve strong polymer-to-polymer bonds in seaming were achieved using new techniques required to penetrate the Y460 coating of the PETG shrink label film. To achieve full market acceptability at run rates which are functional and practiced in industry today, further tests were conducted with Verst Group on their automatic application machinery with attached shrink tunnels.

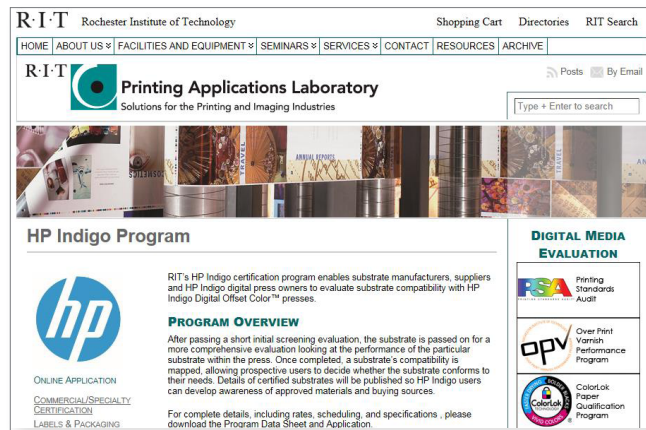
See below for the specific steps and settings used to achieve optimal performance.

FINDINGS:

- Rolls of PETG shrink film are now available in 13 and 30 inch wide rolls (330mm and 762mm). The substrate is provided with the coated side facing out in roll form. There is no need for priming with pre-treated film.
- Run settings for individual models of HP Indigo printers can be found on the RIT.edu website. Be aware that PTH and blanket temperatures are critical as this film is highly sensitive to heat and will distort in warm environments. Corona treating is not necessary for the film to image.

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- Digital inks are tacky and prone to scuffing. An overprint varnish is necessary to protect the printed surface. Varnish is only to be applied directly over the ink; avoiding the edge areas where the seam will develop. Details about the water based varnishes that are approved for this use are available on the RIT.edu printlab media certification website. Klöckner Pentaplast's technical bulletin #500-05 provides more detail concerning this step of the process.



- Rolls of film are then formed into the tubular labels by means of industrial seaming equipment. Conventional solvents will not perform well on digitally optimized film. A unique slow penetrating solvent has been developed for this use. Please refer to Technical Bulletin #500-05 for exact formulations and cure speeds required during this process.
- The application of the finished roll of labels to containers is similar to conventionally printed shrink labels. If the coefficient of friction provided by the overprint varnish is correct, high speed labelling will be possible.

CONCLUSION:

Using a film that has been optimized for the HP Indigo process is the best option for the digital print shrink sleeve market. The Klöckner Pentaplast IG10T22 Y460 PETG film has been approved for this process.

Proper selection of the base film is only the first challenge in the process. Also critical is the varnish application and solvent seaming techniques. The varnish must be applied with care to avoid seam areas and at a level to allow for high speed bottle application. The solvent seaming must be performed with a special formulation, at the proper rate, and allowed to cure for an extended time to achieve success.

By starting with the proper film substrate and following the best practices prescribed here, a unique and graphically appealing shrink film label can be created using digital print equipment. Digitally produced images can be individual, unique, and graphically appealing. These attractive graphics can now reach 360 degrees around a container for maximum appeal.



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