



Fogra certifies printing press in Taiwan

Standardisation in offset printing becoming increasingly international

Jürgen Gemeinhardt

The ProcessStandard Offset and the associated standards series ISO 12647 are not only popular in Germany. For example, many international businesses have made enquiries with Fogra in the past months for relevant training, consultations and certifications. These enquiries came from printing presses as well as suppliers and consultants.

For this purpose, Jürgen Gemeinhardt from Fogra was present on site for a day and tested the execution of quality controls in addition to compliance with the target values and tolerances. The subsequent assessment at Fogra and with the State Association of Bavarian delivered flawless results. The preparations for the certification test were carried out with the support of the Printing Technology Research Institute [P.T.R.I.] in Taipei.



Participants of Fogra's first seminar in Taiwan [left] and evaluation at Crony printing plant.



For this reason, Fogra organised the first Seminar 'Process Control in Offset Printing' in English in December 2008 and it was well received.

Furthermore, printing businesses across the world were certified on the basis of the ProcessStandard Offset Printing [ISO 12647] in collaboration with the state associations of the German Printing and Media Industries Federation. In addition to German printing presses, businesses in Australia, Finland, the UK, Italy, Japan, Croatia, Luxembourg, the Netherlands, Austria, Singapore, Slovakia, Spain and Taiwan were awarded the coveted certificate.

For instance, in November last year, the sheet fed offset printing press Crony in Taipei [Taiwan] could be successfully certified in the areas prepress and print.

This is a state-aided institute to support and develop the printing industry in Taiwan. Jürgen Gemeinhardt was pleasantly surprised by the large interest shown in the printing standard developed by Fogra and the German Printing And Media Industries Federation and used his stay in Taipei to provide businesses with an overview about the rules of the ProcessStandard Offset Printing as well as the process of the certification test in an information session. The participants could be convinced of the great benefits of a standardised workflow and exhibited a desire to implement it in their businesses. ┘

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CtP system acceptance tests and quality control for plates without the use of chemical development or the washout process

U. Schmitt

Objective of the research

Direct imaging on plates is a common method of producing printing plates. The most prominent types now used are thermal image and photopolymer plates. Both these plate types require a chemical processing unit, and some also require a preheating system. A method of plate production which does not require chemical processors or preheating units is highly desired as this would reduce chemical waste and high energy costs.

In recent years, plate manufacturers addressed these issues by introducing new plate types which do not require preheating or a chemical processor. They are marketed as "chemical free" or "process less" plates. Imaging is done with currently available CtP systems for photopolymer or thermal plates. Plate development is eliminated, because these plates are mounted directly in the printing machine. The images are only faintly visible and are in a so-called "latent state". During the start-up sequence in the printing machine the plates are "developed", meaning that the barely visible images, which are the ink accepting surfaces, become visible. The non-printing areas of the plate coating are dissolved and are transferred onto the paper.

The advantage of taking away the chemical processor is accompanied by the fact that these plates show only a latent image when leaving the plate setter. For this reason, currently available measuring devices cannot be used for measur-

ing tone values on these plates. Visual inspection of digital control devices, like the plate wedges or vignettes in the various Fogra test forms, appears to be no longer applicable because the contrast between imaged and non-imaged areas is too low. Fine lines and micro-elements are so faint on these plates that their evaluation is considered very difficult. Commonly used methods for quality control and for the CtP acceptance test cannot be utilized with these plates due to the latent images and lack of measuring devices. Evaluation of test patches after the images are developed in the printing machines could also be hampered by residual printing on the plate surface.

To enhance a secure and efficient print production, the German Printers Federation bvdm formed an interdisciplinary work group with the objective of establishing standards for the area of plate making with these new technologies. Fogra's role in this work group was to establish guidelines for a CtP acceptance test and for quality control when using the new plate types. In 2007, funding of this project was granted by the Bavarian Government. The goal was to publish guidelines for the CtP acceptance test and for sufficient quality control with these new plate types.

To achieve the objective of the research it was necessary to evaluate the plate imaging with and without taking the non-printing areas off the plates. All currently available digital test forms and control devices had to be imaged and evaluated. As a result, new and modified test patterns were developed.

The second aspect of the research dealt with currently available measuring devices and their use with these plates. The final aspect was the definition of target values and tolerances for the CtP acceptance test and for quality control.

Experiments and research methods

A. Evaluation of plate imaging

The first requirement for quality control with these new plate types is that the non-printing areas are taken off the plates.

Two possible ways had to be explored: Manual wipe off and taking the plate into the printing machine.

The advantage of the manual wipe off is the fact that the printing machine is not needed. So this method was preferred and was the first to be evaluated.

The key questions related to the wipe off are:

- Is it possible to get reliable results when measuring tone value patches on these wiped plates?
- Is it possible to get the same results with different cleaning additives and methods?
- Can a number of people achieve reproducible cleaning results?
- Does the measuring device show consistent and repeatable results?

Taking the plates into the printing machine has several downsides. First is the time required to mount the plate and for start-up of the printing machine. For general quality control this method is not preferred, since resources like time and paper are required. However, if the wipe off does not result in reliable results then there would be no alterna-



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tive. Critical criteria are repeatability, standard deviation and the spread of measured results. If any of these are too high then the method of development through printing has to be considered. The difficulties here would be that the plates need to be cleaned off after printing and before any measurements could be performed.

For this method the key questions to be answered were:

- Is it possible to get reliable results when measuring tone value patches on the cleaned plates?
- Are there identical results when different fountain solutions or printing inks are used?
- Is it possible to achieve reproducible cleaning results after the printing?
- Does the measuring device show consistent and repeatable results?

B. Evaluation of existing control tools and development of new tools

For current plate technologies, various test forms like the Fogra-CtP-Testform, the Fogra-Processor-Testform, the Fogra-Register-Testform and the Ugra/Fogra Plate Wedge are available. In this section of the project it was necessary to evaluate if these tools are applicable for these plate types. The main focus was to adjust the test patterns and patches of the various test forms so that they are suitable for evaluation. We also had to evaluate whether or not the patches were sensitive indicators if plates were not imaged correctly.

C. Evaluation of the precision of currently available measuring devices

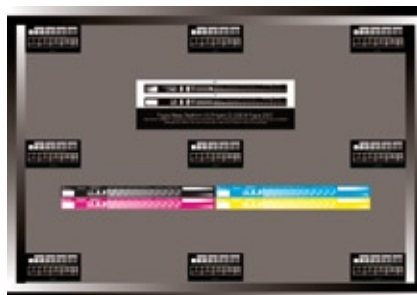
There are different devices available for measuring tone values on direct imaged plates. When the project began, suppliers did not recommend any of them for the new plates. During the course of this project, however, test results were used by the manufacturers to modify and adapt their devices to the plate types.

D. Evaluation of the test criteria of the CtP acceptance test

When a CtP acceptance test is performed, there are over 33 test criteria which have to be evaluated and documented. The main test criteria are related to

- environmental conditions
- imaging resolution
- tone value deviation between different test patches on one plate
- tone value deviation between same test patches on several plates
- tone value spread throughout one plate
- register on one plate and from plate to plate

The main focus in this part of the project was an extensive evaluation of all these criteria. Those criteria which were not applicable had to be identified. The second objective was to specify target values and tolerances for these plate types.



One of the new test forms, especially developed for CtP acceptance tests.

Summary of results

A. Evaluation of plate imaging

All evaluated methods of wiping off the non-printing area from the imaged plates failed to achieve reproducible results. The impact of intensity of wiping [speed and force], as well the application of additives, could not be performed in a fashion that adhered to reasonable tolerances. This was true even for small sized test patches. Only with the use of a printing machine, could the non-imaged areas be taken off the plate material consistently and in a reproducible fashion. Reliable measuring results could be achieved when the guidelines for cleaning the plates were followed.

B. Evaluation of existing control tools and development of new tools

Several new, or modified, test forms and digital control tools were developed for quality control and for the CtP acceptance test. New test forms were related

to the evaluation of tone value transfer and for evaluation of the register.

The Ugra/Fogra Digital Plate Wedge was adapted to the requirements of these plate types.

C. Evaluation of the precision of currently available measuring devices

A methodology for the qualification of any measuring device was developed. In future, measuring errors created by any device can be detected before quality control or a CtP acceptance test is performed. Statistical errors of these devices can be quantified, and therefore be neglected, for specifications of target values and tolerances.

D. Evaluation of the test criteria of the CtP acceptance test

The initial 33 test criteria available for all plate types could be reduced to 19 applicable test criteria. Based on this research project, a guideline for the CtP acceptance was issued by Fogra. These published recommendations are now becoming part of the Process Standard Offset Printing which will be issued by the German Printers Federation in 2009.

Conclusions

The novelty of this project was the detailed scientific and statistical evaluation of plate types which do not need chemical processing and which are "developed" on press.

The completion of this project resulted in the first publication [in German] of a guideline for quality control and the CtP acceptance test for these plate types. For the first time, a methodology for qualification of plate measuring devices has been established. There were adjustments to previous digital control tools and test forms, and the development of new tools suitable for these plate types. ┘



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Packaging Symposium in October 2009

Fogra is organizing its first packaging symposium, which will take place in Munich on 22/23 October. There will be simultaneous German/English interpreting for all presentations.

The symposium will offer a comprehensive introduction into all aspects of packaging from the perspective of print, and it will focus in particular on food packaging and its special requirements.

It will open with presentations about the design aspects of packaging, which will address both technical aspects and the question of visual attractiveness, and these will then be followed by overviews of the capabilities of flexo/gravure, digital and lithographic printing. Eyecatching possibilities delivered by postpress improvements, requirements for folding equipment and gluing as well as transport damage and printed electronics round off the symposium.

Don't miss the opportunity to learn about the latest trends and requirements in packaging and to meet colleagues and experts from all parts of the value chain. ┘

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Andreas Kraushaar calls for digital print standard in Australia

On his recent Australian tour in February, Andreas Kraushaar addressed printers in Melbourne, Sydney and Brisbane to promote the benefits of adopting and embracing ISO standards. He gave an overview of how ISO is organized and what it takes to go from an idea to a published ISO standard.

He believes that its not-for-profit nature makes ISO a more compelling option for printers. "ISO doesn't promote anything, it just offers rules and a framework for an industry to participate in," he said.

Kraushaar's advice to audiences was to understand ISO's history and the technical requirements of the process. According to Robert Gatto of Kayell, whose company sponsored the event in conjunction with Epson, it was encouraging to see such support from printers around the country.

Concerning the heated debate about certification of digital printers according to ISO 12647-2 (the offset process standard) he stated: "Such a thing is technically possible but not appropriate." He also believes that there is a strong need to make a dedicated standard for digital printing. ┘

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New FograCert: Softproofing System

More and more prepress and printing houses use high-quality softproofing systems to either complement their hard copy proofing systems or to introduce its early creative work. In some cases the softproof already supersedes hard-copy-proofs. Therefore the demand for objective and vendor neutral assessment of those high-end softproofing systems is steadily increasing. Fogra has introduced the new FograCert Softproofing Creation to meet these demands. The FograCert Softproofing System allows the manufacturers to prove the high quality of their solutions, while giving guidance and certainty to the end user when choosing a system.

The FograCert Softproofing System specifies requirements for a complete Softproofing System which is intended to achieve a high quality visual match between a display and a reference [typically defined by a printing condition]. Visual characteristics further includes provisions for testing uniformity, profile accuracy, gamut and colorimetric accuracy. This metrology is the result of a research project [Fogra no. 10.047 "Setup and Evaluation of a softproof working station"] that will be published at the end of 2009. ┘

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