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White Paper

How Can I Do Quality Control Checks on Process Free Plates?

The measurement of the dot size or tonal value of an offset printing plate before it is sent to the pressroom has long been an integral part of the printer's quality assurance processes. Indeed, Kodak, in line with all major offset plate manufacturers, has promoted measuring dot size for many years. The purpose was to confirm that the dots throughout the tonal range were within acceptable tolerances, thereby enabling the presses to achieve the required quality.

Monitoring and recording such measurements is necessary because of all the variables that exist in the platemaking process.

Variability in imaging: analogue plates

With analogue plates, there are a number of significant variables in film reproduction and plate exposure which often lead to "soft dots," lacking clarity and stability. This would then be further exacerbated by the processing, with its many variables, such as:

- developer activity & age
- temperature
- brush pressures
- developer flow
- and many more

Variability in imaging: digital plates

The advent of CTP removed many of the variables from the film and the plate exposure, but not all. For visible light devices and those thermal devices also with a Gaussian profile, there are a number of aspects such as focus and beam intensity that can, and do, influence the dot size, particularly when combined with the variables in the processing.

As a result, measurement of the image control elements remained an important step in the quality assurance procedures in most printers. To assist the plate maker, increasing sophistication has been added to automate the measurement and recording, in some cases developing a "closed loop" system, which would adjust the processor's parameters to compensate for any changes in dot size.

Is measuring the plate still important?

Thermal KODAK SQUAREspot Imaging Technology remains a notable exception to the need for measurement because the imaging variables are all but eliminated. In addition, and most importantly, the resultant latent image on the plate is much more resistant to minor changes in the processing conditions. Therefore, the dot size on the plate is extremely stable, across the whole tonal range and throughout the normal cycle of processor bath life.

This stability and consistency of the image in the Kodak thermal system has been demonstrated in many customer environments and has effectively rendered these measurements redundant. However, many printers continue to measure and record, in the belief that this is necessary for their ISO processes. As will be noted below, this belief is, in fact, outdated. Indeed, when asked, many printers will admit that there is no discernable variation in the imaged plates.

The question about whether it is important to measure the plate has come more to the fore as process free plates have grown in popularity, most recently with KODAK SONORA Process Free Plates. Because these plates are cleaned out on press, by necessity their image colour is lighter and the contrast between imaged and not-imaged coating is less than that of conventional wet processed plates. As a result, although the image is perfectly readable for job and colour identification, the dots cannot be measured with any device currently available on the market.

Is it ok to stop measuring process free plates?

This can be concerning to the quality-conscious printer, particularly those seeking standardisation such as ProcessStandard Offset (PSO).

However, reference to Fogra's own paper, *"Possibilities and limits of process control when using low-process plates"* (a free download Extra 29 paper written by Maximilian Ondrusch in November 2012, available on Fogra's website), should put the printer's mind at rest. In the first section, it confirms the common practice of measuring the plate by stating, *"Printing plate monitoring is normally carried out prior to the printing process because it enables prepress platemaking errors to be identified and unsuitable plates to be held back before they reach the press hall."* Importantly though, it goes on to say that *"However, this timing sequence is not an absolute requirement.*"

The paper goes into some detail on the limitations of measurement and potential means of facilitating the reading of dots but states, *"Fogra has found that there is a widespread misconception in the market that low process plates are essentially not 'permitted' by PSO or are even inconsistent with PSO. It needs to be made clear that only the final technical result of printing forms the basis for judging PSO conformity."*

The paper goes on to say, *"The concept of ProcessStandard Offset and the use of low-process plates are therefore not contradictory, as has already been confirmed by successful certifications."* Fogra suggest that *"When using low-process plates the user must adapt his or her practices and requirements in relation to the sequences and methods of quality control and process monitoring."*

Stability makes dot measurement unnecessary

And if the customer remains concerned that quality is not being closely controlled, consider the additional, inherent stability of the process free plate. Not only is thermal imaging an extremely stable operation, but the potential variables within the processor are eliminated, resulting in even greater consistency in dot size. In addition, to remove any concern that the clean out on press could introduce variables, Fogra also found the following in their analysis; *"… one of the key findings is that varying press stripping* [in other words, the develop-on-press process] *parameters has an impact on the number of waste sheets but* ***does not affect the resulting tone values*** *on the plate."*

In conclusion, the measurement of the offset plate prior to being sent to the pressroom has long been a standard practice, necessary to prevent the variables of prepress from adversely affecting the finished print. However, the advent of highly stable thermal imaging, together with the total elimination of processing variables, removes the need to carry out such measurements for Sonora plates, a fact acknowledged by Fogra themselves. SONORA Plate users are abandoning the practice of measuring the plate, and many of them are successfully achieving PSO certification.

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