

METHODOLOGY OF INFORMATION REPRODUCTION QUALITY ASSURANCE IN OFFSET PRINTING

The quality of printing products in offset printing, though regulated by the parameters of the printing process directly in the printing process, but it is the printing plate elements play a key role in the formation of qualitative characteristics of the imprint. In addition, it should be considered that we have the regular distortions of the graphic characteristics of the original at various processing stages and is associated with the loss of the tone rendering when converting the image [1].

An important step in the quality assurance of printing plates is undoubtedly the input control, which should start with the visual assessment of the surface of the plate. It should be uniformly colored, without any kind of points, bands and spots. It is also important to periodically monitor the linear dimensions and thickness of printing plates, which must not exceed the permissible values in accordance with ISO 12635: 2008 [2]. For control of the plate making process distortion was developed an appropriate measuring control strips, which is arranged as a following control elements: resolution and microgeometry control elements; screen diagnostics panels; progress wedge; fields of text information control. Using this control strips opens up opportunities not only for effective quality control of printing plates, but also for constructing the corresponding compensating quantities based on the analysis of the values of the established distortions.

For quality control of the printing processes measures should be taken to control the settings of the printing machine, the parameters of the printing process, to conduct operational control of the imprints and input and current control of the properties of the printing plates. Very important to control the reproduction quality of elements of imprints in accordance with current printing standards [3-4]. The control scale must contain at least a half-tone control field of midtones (40-50%) and half-tones (75-80%) and 100% of the CMYKRGB field. To solve this problem you can use a specially designed control strip, for example, Ugra/FOGRA Digital Print. According to the estimate, the imprints can be considered normalized if the value of color coordinates deviations (for CIELAB) for 100% fields and the magnitude of the tone growth in the middle zone and the half-tone zone are within the permissible limits [2-4].

But during printing the elements of the printing plates will have a significant influence, which changes their technical properties and the quality of

the imprint. Therefore, very important to comprehensively research not only a plate making process, but also a processes of printing. After detailed analysis of experimental data [1, 5] was established that the most significant influence on the change of elements properties of the printing plate is made by the zone of printed contact, namely: physical-mechanical influence of friction forces of contacting surfaces "printing plate - rubber dressing"; changes in the parameters of the fountain solution, which affects the quality of wetting of non-printing elements of the printing plates; when printing certain ink series (metallic, Pantone, UV) possible to form a chemically aggressive environment, which leads to more active wear of the working surface of the printing elements.

In order to minimize the influence of these factors, the following measures should be taken [1, 5]: to make a rational selection of modern plates materials; use special supplements for a fountain solution that helps stabilize its and improves the wetting process of non-printing elements of the printing plate; use methods of operational control of the print run stability of modern printing plates.

The proposed measures are implemented in the form of a methodology of information reproduction quality assurance [6], which contains the following main steps: input control and preparation of materials; diagnostics of CtP system and quality control of plate making process; analysis of the printing process and quality control of imprints; an objective assessment of the print run stability of printing plates.

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