

Wpływ primerów na jakość odbitek cyfrowych atramentowych

Impact of primers on the quality of imprints digital inkjet printing

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Zbadano właściwości primerów do drukowania cyfrowego atramentowego (inkjet) na bazie interpolimerowych kompleksów poli (alkoholu winylowego). Określono wpływ primerów o różnych stężeniach alkoholu poliwinylowego na proces zwilżania papierów offsetowych i powlekanych. Celowość drukowania primerów na papierze przed drukowaniem atramentowym jest potwierdzona za pomocą metod mikroskopii elektronowej oraz badań jakości nadruku (gęstość optyczna, barwa).

Słowa kluczowe: właściwości primerów, drukowanie cyfrowe atramentowe (ink-jet), jakość odbitek

The properties of primers for digital inkjet printing on the basis of interpolimer complexes of polyvinyl alcohol have been investigated. The influence of primers with different concentrations of polyvinyl alcohol on the process of wetting of offset and coated papers was determined. The expediency of primer application on paper before inkjet printing was confirmed by electron microscopy, obtained values of optical density, saturation of colors on the imprints.

Keywords: properties of primers, digital inkjet printing, quality imprints

Introduction

According to analysts forecasts, digital inkjet printing is today the most promising and according to specialists' forecasts, in the coming years, the high growth rates will be maintained in the production of printing and packaging products. The

quality of the inkjet printing depends on many parameters: the categories and technical characteristics of the selected equipment, as well as paper, which should have special surface properties. Therefore, when using ordinary offset paper in digital printing machines, before printing it, a primer is applied to improve the wetting of its surface with ink. The primer provides a constant surface tension, prevents ink from being absorbed by paper. Primers in inkjet printing can be applied selectively using a special separate print head or the entire surface. Since the primer does not have a long drying time, it is applied directly during the printing process.

It is known that for improving the surface properties of paper widely used primers based on polyvinyl alcohol (further PVA). It increases the strength of the paper surface, its smoothness, gloss, optical and barrier properties. This allows the use of PVA in the manufacture of printed paper types, including inkjet printing. It is known that PVA is used in the coating layer of inkjet paper, as it provides good quality and high light fastness of the image, fast absorption and drying of water ink, as well as reduced paper distortion. In addition, PVA has good film-forming properties and is combined with many pigments that have proven themselves in inkjet paper coatings [1-3, 8, 9]. Therefore, the aim of the research was to study the influence of primers applied to ordinary offset papers on the quality of digital droplet inkjet imprints.

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