UDC 655.3.066.11+655.366 +676.026

**INFLUENCE OF PAPER FEATURES AND STRUCTURE ON QUALITY OF PRINTING IMPRINTS FOLDING**

**S. F. Havenko, V. Ts. Zhydetskyi, M. S. Kadyliak**

*Ukrainian Academy of Printing,
19, Pid Holoskom St., Lviv, 79020, Ukraine
havenko@point.lviv.ua*

***Research methodology.*** *The process of imprints folding was carried out on the combined machine Stalhfolder KH 66.6. The researches of papers physical and mechanical properties have been carried out in order to determine the absolute and relative deformation in the longitudinal and transverse directions on elasticity tester constructed by Prof. Ya.Chekhman. The resistance to double bends was determined using a folder machine according to the standard method. Changes of paper upper layer structure in the places of bend formation have been studied using stereoscopic microscopy.*

***Results.*** *It has been proved that paper characteristics, their composition, the presence of the coated layer, the direction of fibres in the paper structure influence greatly on the quality of imprints folding. It has been established that the most resistant to deformation in both the longitudinal and transverse directions is the paper of UPM Finesse Premium Silk brand, and the weakest one is the paper of Royal Roto Silk brand, which can be obviously explained by the presence of the coated matte cover in the latter one; this layer peels off easily while folding. With the help of the electronic microscopic studies, the change of the surface structure after repeated paper imprints folding has been revealed.*

***Novelty.*** *The nature of the deformation curves of the coated kinds of paper with glossy and matte coating have been studied and the change in the strain at the minimum and maximum load in the place of the formation of folds and at some distance from it have been shown.*

***Practical significance.*** *Our studies allow making the right choice of variants for imprints folding on coated papers with the certain physical and mechanical properties.*