UDC 004.9+655.3.062

THE QUALITY ASSESSMENT OF REPRINTS
BY MEANS OF FUZZY LOGIC

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**Research methodology.** The method of constructing membership functions of fuzzy sets by using a matrix of pairwise comparisons with subsequent modeling by means of fuzzy logic has been used. The advantage of fuzzy logic is the ability to use expert knowledge about the structure of the object researched in the form of linguistic variables that are associated with the «if-then» rule.

**Results.** The functions for such indicators of offset prints as optical density of print, level of «gray» balance, precision of ink combinations, dot gain of halftone dots, excretory capacity have been constructed. The equation membership functions and prints’ quality value in fuzzy form for low quality μ н = 0,22, satisfactory – μ з = 0,62 and high μ в = 0,66 have been obtained when substituting degrees of membership in fuzzy logic equations that determine the quality of sheet offset printing. Defuzzification of obtained fuzzy values of prints’ quality on a «center of gravity» allows to obtain a quantitative assessment of the prints quality. In our example there are 6.61 conventional units.

**Novelty.** The analysis of offset printing indicators by using an expert linguistic information and «if-then» rules provides a fuzzy logic equation of linguistic variables influence on the quality of offset printing and, accordingly, allows to estimate the quality of the printing process.

**The practical significance.** The proposed method of prints quality calculating in a quantitative form allows to develop the simulation models of printing quality prediction in the future.