

EFFECTS OF DIFFERENT PRODUCTION PARAMETERS ON MECHANICAL PROPERTIES IN FDM-PRINTED PRODUCTS

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ABSTRACT

FDM, which is a common additive manufacturing technology in producing plastic parts, allows for the comparison of many different production parameters. This article presents the variation of density, hardness, tensile and impact strength depending on the production parameters of the number of contours, infill pattern and orientation angle. 8 different production parameter combinations were created using 2 different contour numbers as 1 and 2, 2 different infill patterns as sparse high density and hexagram, and two different orientation angles as 0°/45° degrees, and sample production was made with FDM technology and ABS material. In the experiments performed on the samples produced with the specified production combinations, no major change in density and hardness was detected, and it was determined that the production parameter combination that gave the best results in both tensile and impact strength was hexagram infill pattern, 45° orientation angle and 2 contour production parameters.

Keywords: FDM, tensile strength, impact strength, ABS.