

## **Influence of Building Orientation and Post Processing Materials on Mechanical Properties of 3D-Printed Parts**

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**Abstract :** Since there are lots of ways for building and post processing of parts or models in 3D printing technology, the main objective of this research is to provide an understanding how mechanical characteristics of 3D printed parts get changed for different building orientations and infiltrates. Tensile, compressive, flexure, and hardness test were performed for the analysis of mechanical properties of those models. Specimens were designed in CAD software, printed on Z-printer 450 with five different build orientations and post processed with four different infiltrates. Results show that with the change of infiltrates or orientations each of the above mechanical property changes and for each infiltrate the highest tensile strength, flexural strength, and hardness are found for such orientation where there is the lowest number of layers while printing.

**Keywords :** 3D printing, building orientations, infiltrates, mechanical characteristics, number of layers

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