

## Experimental determination of flexural strength on cylindrical and plate samples produced by additive manufacturing from ABS-X material

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### ABSTRACT

In this paper the influence of sample infill on the flexural strength will be presented. Plate and pipe-shaped specimens were tested by three-point bending according to the ISO 178:2019 standard. Samples were produced using ABS material with the inclusion of an unknown filler designated as X. The infill during the production of samples was 50% and 100%, while all other parameters such as printing temperature, bed temperature, nozzle width, printing speed and layer height, were the same for both types of samples. Samples were printed vertically, which does not actually refer to the mechanical properties of the material itself, but to the influence of the amount of infill on the strength of the bond between the layers. The tests were performed on a Shimadzu AGS-Ks 100kN universal machine. Test results indicate a significant influence of the infill on the bond strength between the layers and thus on the flexural strength of the samples. Further research will be carried out to measure the influence of samples treatment with acetone on their flexural strength.

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