

# EFFECT OF SECTION THICKNESS ON CAVITATION BEHAVIOUR OF SELECTIVE LASER SINTERED POLYAMIDE 12

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## Abstract

*The present study focuses the cavitation resistance results of samples obtained by the Selective Laser Sintering technology. All samples were made from Nylon 12 – Polyamide 12 powder, also known as PA2200 in the industry, produced by EOS GmbH. The powder used for building the samples represented a mixture of 50% new powder and 50% recycled powder. Samples with different section thicknesses (0.4mm; 0.8mm and 1.0mm) were subjected to the ultrasonically induced cavitation test method to investigate the effect of geometry on their cavitation behaviour. The change in mass loss during different cavitation times was measured on the tested samples. The morphology of cavitation damage was characterized using Scanning Electron Microscopy (SEM). The results obtained in this paper have shown that section thickness of the samples has a significant influence on the cavitation resistance, with the highest cavitation resistance obtained for the samples a thickness of 0.4mm.*

## Keywords

Polyamide 12 powder, SLS, mass loss, cavitation resistance, section thickness, SEM, additive manufacturing.

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