ABSTRACT

The development of material technology that produces a new type that is stacked from several layers and called composite Strength and itsjinya is important one important factor in the performance of composites, with a composite arrangement that then strong construction will be more resistant to deformation is not easily damaged, strong and resistant to impact. Composite materials continue to be active, one of which is on the structure of the aircraft and is a very breakthrough where during this time the aircraft stuktur only uses metal materials. The helicoidal structure is one of the forms of structure that can enhance the mechanical properties of the material, the durability of especially its fractures, and the possible strength and isotropy of the field. There are several factors that make up the helicoidal structure, namely the receding besat orientation of the builder and the thickness of the layer to obtain a high flexural strength value. Experimented using full factorial design methods to determine the flexural strength value of each design and determine the optimal design with the highest strength. Statistical analysis using ANOVA is performed to a level level level. Generated optimal design of helicoidal structure with large orientation angle [0/7°/...] and layer thickness of 0.2 mm.

Keywords: Helicoidal structure, flexural strength, full factorial design, ANOVA