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### **Abstract**

Stiffened Laminated composite plates are widely used in the aerospace, civil, marine, and automotive industries due to their high specific stiffness and strength, excellent fatigue resistance, long durability and many other superior properties compared to ordinary plates. In this paper, the effect of stiffener configuration, number of layers and boundary conditions on the free vibration response of stiffened laminated composite plates are examined with respect to natural frequencies and mode shapes. Six rectangular stiffeners configurations models are used with two types of boundary conditions which are simply and clamped supported. Comparative study is conducted to investigate the effect of stiffener configuration, number of layers and boundary conditions on the free vibration response of stiffened laminated composite plates using the finite element system ANSYS16.

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### Index Terms

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### Keywords

Laminated, composite plate, stiffener, cross-ply, number of layers, modal analysis, frequency.