

DESIGN AND ANALYSIS OF LEAF SPRING BY MAXI TRUCKS

A PROJECT REPORT

Submitted by

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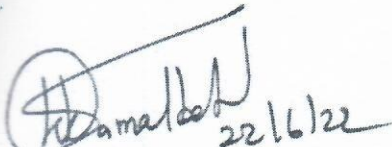
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BONAFIDE CERTIFICATE

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ABSTRACT

Reducing weight while increasing or maintaining strength of products is getting to be highly important research issue in this modern world. Composite materials are one of the material families which are attracting researchers and being solutions of such issue. In this paper we describe design and analysis of composite leaf spring. For this purpose, a rear leaf spring for MAHINDRA "MODEL-Bolero Maxi Truck" is considered.

The objective is to compare the stresses, deformations and weight saving of composite leaf spring with that of steel leaf spring. The design constraint is stiffness. The Automobile Industry has great interest for replacement of steel leaf spring with that of composite leaf spring, since the composite materials has high strength to weight ratio, good corrosion resistance. The design parameters were selected and analyzed with the objective of minimizing weight of the composite leaf spring as compared to the steel leaf spring.

Result shows that, the weight of composite leaf spring was nearly reduced and compared with steel material. The leaf spring was modeled in Creo Parametric 4.0 and the analysis was done using ANSYS 18.1 software. The fatigue life of both steel and composite leaf is compared using ANSYS software.



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