FEA ANALYSIS OF MASTER LEAF SPRING

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ABSTRACT

Leaf springs are one of the oldest suspension components they are still frequently used, especially in commercial vehicles. The past literature survey shows that leaf springs are designed as generalized force elements where the position, velocity and orientation of the axle mounting gives the reaction forces in the chassis attachment Positions. Modeling is done using CATIA V5R17 and Analysis is carried out by using ANSYS 14.0 software for better understanding. This paper describes static analysis of two conventional steel leaf springs made of SUP 10 & EN 45. Analytical calculated results are compared with FEA result. These springs are comparing for maximum stress, deflection and stiffness. SUP 10 springs has lower value of maximum stress, deflection and stiffness in compare to 55 Si 2 Mn 90 spring. Although, market price is much lower than Sup 10 spring.

KEYWORDS: Ansys 14.0, CATIA V5R17, Steel Leaf Spring, SUP 10