Design and Analysis of Stringer on the Chassis Frame in Load Carrying Vehicle



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Abstract In this paper, design and analysis of stringer for the chassis frame in load carrying vehicles is reported. In order to resist the shock, twist, and other stresses, the chassis must be a very hard one. In addition to the strength, the chassis should with-stand adequate bending and torsional stiffness. Here, the work performed towards the analysis of stringer in chassis with the constraints of stiffness and strength by using finite element analysis software. Results show that hat stringer is stronger than C-stringer when the stringer is in bending conditions.

Keywords Stringer · Design · Mechanical properties · Finite element analysis

1 Introduction

Patel et al. [1] have analysed the existing heavy vehicle chassis of TATA 2518 TC for different materials. The model of the chassis is drawn by using CAD packages and analysed by using finite element analysis software. After analysis, the results are compared between the existing structures in steel chassis. The geometrically and materially nonlinear analysis is carried out to the pre-stressed compression members on the building boundary conditions.

The stress analysis is carried out on the Pro-Mechanica software and calculated the max stress generated on the chassis. The displacement analysis is also done, and

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