ANALYSIS OF STATIC LOADING ON TOBACCO STYLE M-164 ELECTRIC CAR FRAME DESIGN USING VISUAL SIMULATION METHOD

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ABSTRACT

Strength, durability, and safety can be enhanced by selecting the Strength, durability, and safety can be enhanced by selecting the type of vehicle frame and the materials to be used and the materials to be used. The rapid advancement of technology today allows for easier designing and analysis of a design before production. In this study, static loading analysis was performed on a Monocoque chassis design using Solidworks 2018 software to determine stress, deflection, and safety factor values. This research aims to understand the strength values of the Monocoque chassis and analyze its frame. The materials utilized in this research are Carbon Steel ASTM A36 and Carbon Steel AISI 4130. The analysis results for Carbon Steel AISI 4130 under an assumed load of 150 N yielded a maximum stress of 12.1 MPa, deflection of 0.109 mm, and a safety factor of 2. For Carbon Steel ASTM A36, the results showed a maximum stress of 12.3 MPa, deflection of 0.113 mm, and a safety factor of 2.

Keywords: *Von misses stress, deflection, safety factor*