

ANALYSIS OF STATIC STRENGTH OF SPECIAL TOOL FOR ASSEMBLING WAGON BODY

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Abstract

This paper presents the results of a finite element analysis (FEA) conducted on the static strength of an assembly comprising a special tool used for assembling the wagon body including the underframe, body sides, ends, and roof. The assembly was designed by “AMM MANUFACTURING” from Kragujevac, Serbia. The elements of the assembly were specially designed endure the operational load experienced during the wagon body assembly process without undergoing any permanent deformation. A numerical analysis was performed on the aforementioned special tool, which serves as a support tool for assembling the wagon body. The special tool was constructed using structural and stainless steel. The finite element model (FEM) was created based on a 3D CAD model obtained from “AMM MANUFACTURING” and the analysis of the static strength was carried out using suitable software. The numerical analyses were conducted in compliance with relevant standards. The results obtained demonstrates that the assembly of a special tool is capable of withstand the operational load during the wagon body assembly process without experiencing any permanent deformation.

Keywords

Railway Industry, Special tool, Numerical Model, Wagon Body.

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