

ANALYSIS OF STATIC STRENGTH OF THE PRODUCTION TOOL FOR MOUNTING AND INTERNAL TRANSPORT THE CAB OF THE MIREO HIGH-SPEED TRAIN

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Abstract

The subject of this paper is the static strength analysis of a support production tool used for the mounting and internal transport of the cab of the MIREO high-speed train. The assembly of the production tool was designed by "AMM MANUFACTURING" from Kragujevac, Serbia. Numerical analyses were conducted using the finite element method (FEM). The elements of the assembly were specifically designed to withstand the operational load during the assembly of the "Mireo Cab" and internal transport, without experiencing any permanent deformation. The structure of the assembly was constructed using various materials, including structural steel grades S235JRG2 and S355J0, quenched and tempered steel grades C45 and 42CrMo4, PE500, and bolts of grades 8.8 and 10.9. The creation of the finite element model (FEM) and the analysis of static strength were performed using a specific software package. The results of the numerical analysis indicate that the assembly of the production tool can safely endure the working load, equivalent to the mass of the "Mireo Cab," without undergoing any permanent deformation. Based on the static strength results, the customer has received manual instructions for the proper usage of the assembly, particularly during lifting and internal transport.

Keywords

High-speed train, Finite Element Analysis, Production Tool, Railway Industry.

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