



GEOMETRY RECONSTRUCTION AND STRENGTH ANALYSIS OF THE DOOR SUPPORT FOR THE METRO TRAIN PLATFORM “INSPIRO”

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***Abstract** – Metro train platform “Inspiro” presents a base Siemens platform for all future metro systems that the company is going to produce. Platform “Inspiro” should have as many universal mechanical parts and elements as possible. The task of this work was to make a geometry reconstruction of the current construction solution, to ensure cheaper manufacturing of this door support. Different 3D models of the door support, using PTC software package, were constructed that should be manufactured by machining, welding, casting, and forging. To find the optimal solution, it was approached to strength analysis as well as techno-economic analysis. The stress and deformation analysis, and the calculation of the safety factor were performed by ANSYS software package. These analyses show how the door support behaves under the influence of a force of the weight of the door. Also, the aim of these analyses was to find optimal solutions, economically profitable to be able to consider the production and use of the most appropriate construction of door support. In this case, the casting method was chosen as the most profitable way to produce door support for this metro train system “Inspiro”.*

***Keywords** - Metro train system, Construction solutions, Strength analysis, Techno – economic analysis.*

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