Side Plate Strength Analysis of the Mechanism for Vehicle Axle Scale Calibration

Miroslav Blatnický¹, Ján Dižo¹, Mária Blatnická²
¹University of Žilina, Faculty of Mechanical Engineering, Department of Transport and Handling Machines, Univerzitná 8215/1, 010 26 Žilina, Slovak Republic, e-mail: miroslav.blatnicky@fstroj.uniza.sk, jan.dizo@fstroj.uniza.sk
²University of Žilina, Faculty of Mechanical Engineering, Department of Applied Mechanics, Univerzitná 8215/1, 010 26 Žilina, Slovak Republic, e-mail: maria.blatnicka@fstroj.uniza.sk

This paper deals with the description of a mechanism for calibration vehicle axle scales with a loading capacity up to 10 tons and strength analysis of its selected part. The strength analysis will be carried out in ADINA software and this analysis results will be used to check the safety of the structure and in case of exceeding the permissible stress, deformation, etc. This analysis results will form a benchmark material for optimisation of this structure. The next step of this issue will be strength analyses of all important parts, i.e. boxes with weights and upper girder. After performing these calculations and the resulting optimisation, the prototype production will be feasible.

Keywords: Test device, Strength analysis, ADINA software, Vehicle axle scale

Acknowledgement

This paper was created during the processing of the project “RAILBCOT - RAIL Vehicles Brake Components Test Stand”, ITMS Code 26220220011 based on the support of Research and Development Operational Program financed by European Fund of a Regional Development. The work was also supported by the project No. APVV-0842-11: “Equivalent railway operation load simulator on the roller rig”. Research-Educational Center of Rail Vehicles (VVCKV)

References


