FOR THE DESIGN AND OPERATIONAL DEVELOPMENT CAR FRAME TRAILER TRANSPORT CARS

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Today, it is important for developers to reduce the time and cost of creating new designs. This is possible with the use of modern methods, tools, technology, design and finishing of the construction to the optimum level. Technical and aesthetic quality of design is largely determined by the above.

An important component of the construction of transport and traction machine is a frame cabin. The main function of the cab - providing living space area of the driver in case of accidents. Often with industrial design considerations performed overestimated mass margin and stiffness. On the one hand ensures the safety zone of the driver and the other material used irrationally, increasing the cost of production and operation. This significantly reduces energy absorbing capacity of the frame, and increase energy damping does not meet the required level and the law changes. This adversely affects the loading of nodes and connections of the machine in case of accidents.

Testing of construction on natural samples is expensive and requires a substantial investment of time, so it is advisable to solve the problem theoretically. State level stress-strain state, energy performance car frame is possible to investigate the finite element method using 3D models and advanced program.

In the paper the analysis of the types of models frame, loading methods and laws change loads of features fixation frame types of problem to be solved. Preliminary results. Proposals to improve the design parameters of the frame, providing protective properties, weight and the required energy absorption. Provides a method for validating theoretical results.

In this way the implementation of the proposed method and algorithm research framework allows you to: identify the most loaded parts; ensure proportional damping energy cabin upon impact in emergency situations; organize the desired pattern of change of energy damping while maintaining the area of living space.