

THE SIMULATION STUDY OF SAFETY CAGE USED IN RALLY CARS

Summary

The article shows the results of simulation studies of deformations of safety cage used to strengthen the passenger space in the sport car. Taking under consideration that the cage is individually designed for each model, the construction of the presented cage has been introduced as a typical and schematic cage for sport cars. Apart from that, the measures do not vary from the standard size (outer pipe diameter is 50mm, inner pipe diameter is 35mm) and they match the obligatory requirements set by the FIA (Fédération Internationale de l'Automobile).

Three calculation models have been presented: first charged with the force perpendicular to the roof surface, second charged with the force of 40 degrees angle, third model of side barrier impact. The analyzed models involve the car's initial speed range from 50 to 120 km/h and different heights of the car fall.

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