Strength Analysis of a Structure for Attachment of a Winch on SUV

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The paper deals with design proposal of a cover part of a strength bumper, which is tasked with creating the outer design lines of an automobile without sharp edges according to legislation in force and also with protecting a vehicle against damage. The cover part serves for covering the strength part of a back strength bumper, which will be equipped with a winch and used in off-road vehicle Nissan Patrol Y61. Another aim is to perform a FEM analysis of the strength part of the bumper loaded by towing force of the winch and thus to verify a safety of the structure. The next solution of the issue will be an approach to real testing, which will verify a correctness of a numerical computations and also fulfilment of the purpose of creating the structure. Bases of FEM analysis and practical experimental verifications of the structure will be also used as a background for granting approvals, certifications and type approval by superior authorities.

Keywords: Numerical analysis, Winch, SUV, Bumper

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