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A New Accident Proof Material Design for B - Pillar of A Car

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Abstract:Side impact is the second most frequent mode of accidents. It is defined as the incident when a striking vehicle hits a target vehicle in the area of one or more of its A ,B ,C - pillars, and doors during which the kinetic energy is transformed into deformation of both vehicles. The capability of impact energy absorption in B- pillar is discussed in the study. Analyses on the performance of pillars in side crashes include displacement and intrusion or deformation extent of structures and analysis of maximum induced stress. This study results indicate that the carbon/epoxy composite side impact pillars have considerable potential for reducing occupant injuries. The present results are compared with solutions available in the literature and obtained by the help of AUTODESK COMPOSITE SIMULATION and ANSYS software. The AUTODESK COMPOSITE SIMULATION software has also a composite workbench used to model the composite ply lying to analyze the carbon composite body structure at coupon or elemental level to find the correct material data.

Key words:A B C Pillars, carbon/epoxy, Steel, Accident proof, Finite element.

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