

End-of-Life Vehicle Framework in Bumper Development Process

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Abstract : Developing sustainable and environment-friendly products has become a major concern in the car manufacturing industry. New legislation 'End of Life Vehicle' increased design complexities of bumper system parameters e.g. design for disassembly, design for remanufacturing and recycling. ELV processing employs dismantling, shredding and landfill. The bumper is designed to prevent physical damage, reduce aerodynamic drag force as well as being aesthetically pleasing to the consumer. Design for dismantling is the first step in ELVs approach in the bumper system. This study focused on the analysis of ELV value in redesign solutions of the bumper system in comparison with the conventional concept. It provided a guideline to address the critical consideration in material, manufacturing and joining methods of bumper components to take advantages in easy dismounting, separation and recycling.

Keywords : sustainable development, environmental friendly, bumper system, end of life vehicle

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