

Multi-Pass Shape Drawing Process Design for Manufacturing of Automotive Reinforcing Agent with Closed Cross-Section Shape using Finite Element Method Analysis

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Abstract : Multi-stage drawing process is an important technique for forming a shape that cannot be molded in a single process. multi-stage drawing process in number of passes and the shape of the die are an important factor influencing the productivity and moldability of the product. The number and shape of the multi-path in the mold of the drawing process is very influencing the productivity and moldability of the product. Half angle of the die and mandrel affects the drawing force and it also affects the completion of the final shape. Thus reducing the number of pass and the die shape optimization are necessary to improve the formability of the billet. The purpose of this study, Analyzing the load on the die through the FEM analysis and in consideration of the formability of the material presents a die model.

Keywords : automotive reinforcing agent, multi-pass shape drawing, automotive parts, FEM analysis

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