

체적성형분야에서의 CAE 적용사례 및 개발동향

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CAE Applications and developments in Bulk forming processes

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Abstract

The Finite Element Method(FEM), due to its unique capability in describing the complex shape and boundary conditions, has made a significant contribution to the numerical simulation of manufacturing processes such as casting, bulk forming, sheet forming, machining, welding, heat treating and many other processes. It has been used as an essential tool for product and process design engineers to reduce development time and cost by simulating individual process numerically. As continuous progress is being made in Finite Element Methodology and computing technology, more complex manufacturing processes are being explored. In this paper, recent applications and developments using the commercial code DEFORM are presented. Although DEFORM™ was originally developed for metal forming simulation, due to its unique remeshing capability the use of the code has been extended to other manufacturing fields, such as welding, machining and glass forming. To demonstrate the methodology, some successful applications of the program to various forming processes are presented in this paper.

Key Words : metal forming, machining, optimum preform design, DEFORM

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