

عنوان مقاله:

Investigation of Effective Parameters of the Two-Layer Sheet Hydroforming Process for Hollow Parts Having Complex Geometry

محل انتشار:

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خلاصه مقاله:

Hydroforming process is a deep stretching process with a difference that a fluid is used instead of the mandrel. This paper investigates the hydroforming process of non-cylindrical and non-spherical geometries using finite element analysis software to calculate the influences of effective process parameters such as the coefficient of friction between the surfaces and the pressure applied during the process. The results indicate that decreasing the friction between surfaces, with an optimum lubrication, can decrease the changes in thickness which is related to sheet heightening and leads to a final product with more uniform thickness and more appropriate strength. On the other hand, it is observed that with a pressure change, there are very slight changes in the thickness for this geometry which can be neglected. The geometry of the mold also showed a great influence on the final quality of the formed sheet.

کلمات کلیدی:

Sheet hydroforming, Complex geometry, Finite element analysis, Friction, Multistage pressure

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