عنوان مقاله:

Effects of Process Parameters on Superplastic Forming of a License Plate Pocket Panel

محل انتشار:

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خلاصه مقاله:

Superplastic forming (SPF) is a manufacturing process utilized in the automotive industry to produce complex geometry aluminum or magnesium alloy components which cannot be fabricated at room temperature. This paper investigates the effects of the die entry radius and the interfacial friction coefficient on the required forming time and thickness distribution of a superplastic formed part. A commercial finite element software, ABAQUS/Implicit, is applied to simulate forming of AA۵۰۸۳ aluminum alloy into a license plate pocket panel. The results indicate that for a fixed friction coefficient, increasing the entry radius reduces the forming time and enhances the formed part quality, in terms of thickness distribution. It is also shown that the lower the friction coefficient, the higher the sensitivity of the forming //.time to the die entry radius variations

کلمات کلیدی: