

## عنوان مقاله:

An Investigation in Effects of Tool Geometry and Friction Coefficient on the Maximum Drawing Force in Deep Drawing Process by Finite Element Method

## محل انتشار:

همایش ملی آشنایی با فناوریهای روز در زمینه مهندسی مکانیک (سال: 1389)

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## خلاصه مقاله:

Many parameters are effective in deep drawing process. Some of these parameters that affect success or failure of a deep drawing process are tool geometry, friction coefficient and drawing force that cause the rupture and wrinkling in deep drawing process of axisymmetric hollow containers. In this paper, at first, a basic theory of deep drawing and also a review of various methodologies formulated for the finite element modeling of deep drawing were presented. Then a numerical model was developed to investigate the effects of friction coefficient and geometric parameters on maximum drawing force in the forming of sheet metal SPX1250 under simple cylindrical deep drawing conditions by finite element (FE) simulation done by using ABAQUS/EXPLICIT software. The required force for forming was examined in this paper. The results of simulations show that a change in friction coefficient between interface surfaces leads to a significant difference on the maximum drawing force of the punch and decrease the rupture in the blank and also the effect of the matrix radius on the drawing force is more important than the effect of the punch rim's radius. The results of this paper were compared with the Sieble's theory and experimental tests and with the results of the other researchers. There was a high level of agreement between the findings of the present study and the findings of the other researchers.

## کلمات کلیدی:

Deep drawing, Drawing force, Finite element, Matrix radius

## لینک ثابت مقاله در پایگاه سیویلیکا:

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