

عنوان مقاله:

Numerical and Experimental Investigation of Thickness Variation in the Spinning Process of Al-1060 Alloy

محل انتشار:

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خلاصه مقاله:

Metal spinning as a kind of manufacturing process has capability to shape hollow components. In present work shear spinning process is used to form plates into conical shapes. Moreover, the aim of this research is to demonstrate the impact of the process parameters (i.e. feeding rate and spindle speed) on wall thickness. This approach was done by experimental and finite elements method. The results illustrated that wall thickness decreases while feeding rate increases in spinning process. The experimental results confirm the Finite element analysis (FEA) results during thickness evaluations so this shows that FEA results are reliable for this specific case. The results of analysis reveals that the best condition for spinning is for feeding rate of 40 mm/min and spindle speed of 50 rpm in which highest thickness of 1mm is obtained. In consequence, the findings also illustrated that by decreasing the feeding rate and spindle speed, higher thickeners can be observed during shear spinning process.

کلمات کلیدی:

Spinning, Thickness variation, Rotational Speed, FEM, Al-1060

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