IMPACT: International Journal of Research in Engineering & Technology (IMPACT: IJRET)
ISSN(P): 2347-4599; ISSN(E): 2321-8843
Vol. 4, Issue 11, Nov 2016, 9-16

FORMABILITY OF ELLIPTICAL SS304 CUPS IN SINGLE POINT INCREMENTAL FORMING PROCESS BY FINITE ELEMENT METHOD

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ABSTRACT

The purpose of the present project work was to determine the formability of 304 stainless steel alloy to fabricate elliptical cups using single point incremental forming (SPIF) process. The finite element analysis has been carried out to model the single point incremental forming process using ABAQUS software code. The process variables of SPIF were sheet thickness, step depth, tool radius and coefficient of friction. The process parameters have been optimized using Taguchi techniques. The major process parameters influencing the SPIF of elliptical cups were sheet thickness, step size and tool radius.

KEYWORDS: 304 Stainless Steel, Elliptical Cup, Single Point Incremental Forming, Finite Element Analysis, Step Depth, Tool Radius, Sheet Thickness, Coefficient of Friction