

## عنوان مقاله:

An Experimental Study on the Process Parameters of Incremental Forming of Al-Cu Bimetal

## محل انتشار:

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## خلاصه مقاله:

Single point incremental sheet metal forming is a process that forms products without the complex dies and tools with low cost. In this study, the incremental sheet metal forming process has been experimentally investigated on the explosively-welded Al/Cu bimetal sheets. Also, the effects of process parameters such as arrangement of layer s bimetal, tool diameter, and tool path were investigated on the forming force, thickness distribution, formability, and roughness. At first, the bimetals were produced by explosive welding process. Then, two tool diameters, step and spiral tool paths and layer arrangement were chosen as input parameters. The results showed that the forming force increases with increasing the tool diameter and using aluminum as a top layer (contact with tool). Also, using spiral tool path increases the average forming force and decreases the maximum thickness changing. The formability increases with increasing the tool diameter and using the copper as top layer with spiral tool path.

## کلمات کلیدی:

Incremental forming, Explosively-welded Al/Cu, Layer arrangement, Forming force, Thickness distribution, Formability

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