

## Article Abstract

<b>Title:</b>	Effect of the thickness distribution and setting condition on springback in multi-layer sheet bending
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<b>Abstract:</b>	The new industrial demands for special materials with better properties have led to the invention of composite materials. Two- layer clad sheets and three-layer sandwich sheets are increasingly applied in vast range of industrial application due to their remarkable characteristics. In this paper springback -which is an undesirable phenomenon- in sheet metal bending was studied in two-layer clad sheets and three-layer sandwich sheets. First based on bending theory, springback of a multi-layer sheet was discussed analytically. Then, the effect of layers' thicknesses and setting condition on springback were studied and then Genetic Algorithm (GA) was applied in order to minimize springback in certain setting condition. FEM simulation of sandwich sheet four-point bending was also performed in order to verify analytical results and GA output. Considering both analytical and FEM approaches, it was observed that springback can be reduced with the change in layers' thicknesses and layers' configuration.
<b>Keywords:</b>	clad sheet, sandwich sheet, bending, springback, genetic algorithm, FEM