

STUDY ON EFFECTS OF SPRING BACK ON SHEET METAL BENDING USING SIMULATION METHODS

S. SARAVANAN¹, M. SARAVANAN² & D. JEYASIMMAN³

¹Research Scholar, Department of Mechanical Engineering, Periyar Maniammai University
Vallam, Thanjavur, Tamil Nadu, India

²Professor, SSM Institute of Engineering and Technology, Sindalagundu,
Dindigul, Tamil Nadu, India

³Associate Professor, Department of Mechanical Engineering, Periyar Maniammai University
Vallam, Thanjavur, Tamil Nadu, India

ABSTRACT

In emergent engineering world in mainly focused on pre-determined simulation analysis of spring back was successfully optimization of the sheet metal bending process. The most of causes in sheet metal thickness and metal type and tool holder and shank and radius and fraction, friction with shapes and tie gap on effects on spring back materials experimented in variable aluminum and copper and high strength steels and sheet metal have been used as variables conducted study in different scenarios. Since the most of belongings of each variable on the formation of this model obtained in results only have spring back effects metal deforming in examined in our research work. This employ calculates results shown in deformed results gathering in Sheet metal thickness from metric standards follows in 1.2 mm to 1.8 mm thickness of spring back issued minimized in 14% and 18.5% determined it. Wherever the maximize of Sheet metal strength and stability spring back maximized behave spring back of this sheet should depend after un-certain loading conditions were significant to determine. The effects of material category as show that using of alloyed sheet metal was plays in high strength and durability of sheet metal spring back effectiveness minimized in 67%. However, the increasing the tool radius leads minimizing the spring back effectiveness was efficient of concern from 0.01 to 0.50 frictions co-efficient was gather it. This friction forces were makes in spring back effects of material shape and tool geometry working simulation and varies parameters and sheet metal orientation, positions were examining it. Since the past literature surveyed ultimate exploited and compensation tool is considered for Sheet metal bending process as done.

KEYWORDS: Spring back, Sheet Metal, Bending Process, Effects, Simulation Analysis, Optimization & Variables, and effects

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INTRODUCTION

Engineering fields of bending are one of the most leaded operational causes in widely applied in Sheet metal forming operations consist. [1]This most of research spring effectiveness only focused on Sheetmetal forming operation and process in the especially various automobile industry and aeronautical industries were designed in this cause. [2]The bending process includes maximized deformation of the structure is defined in certain defects analyses in resistance and mechanical process of defects exists. [3]This accompanied by means of strains in the instability of phenomena accompanying of this processing. [4]This instability of entire bending process deformation problems in cracking, breakage, and negative deformation as well as after the process of bending and