

Thesis Title Comparison between Acoustic Emission and Strain Gage Signal on
 the Effect of Clearances of Blanking Process

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Abstract

Blanking die of 25 mm. diameter circular blank was designed for the research work. Material AISI 1012 of 0.8 mm. thickness has been used as specimen. Comparison between acoustic emission and strain gage signal on the effect of clearances of blanking process has been made. The clearances of 5, 7, 9, 12 and 15 percent of thickness and coconut oil was used as lubricant. Experimental procedure was divided into 2 sections as follows; First section, studied the cutting force of sheet metal by using load cell made of strain gage set below the tool. Second section, studied the acoustic emission signal using transducer set on the die plate.

The result from the experimental investigation ,show that acoustic emission signal and cutting force measured by strain gage of sheet metal are related to the stress of the material. The result is in general agreement with the previous published work. The result from different clearances show the relationship between stress and acoustic emission, if the clearance increase the blanking force and the acoustic emission signal are reduced.

Keywords : Acoustic Emission / Strain Gage / Clearances