

Experimental Investigations into Manufacturing Processes Used to Produce Musical Steel Drums

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ABSTRACT

This paper explores innovative manufacturing processes, which can be used to manufacture the national musical instrument of Trinidad and Tobago, the Musical Steel Drum or Steelpan. The main manufacturing process used today is the manual or Handforming technique. In order to achieve more consistent and deeper formed components while maintaining the high quality of the instrument, it is proposed that the Marforming process and the Flowforming process, an adaptation of the Spinforming process be used to replace the traditional Handforming method. Experimental investigations using the Flowforming or Spinforming and Marforming processes proved to be promising in achieving the required strain distribution of the formed component. Evaluation took the form of strain analyses of preformed steel drums. It was found that the Marformed components had the smallest range of % strain values while the Spinformed components had the largest range.

Keywords: Musical Steel Drum, Steelpan Musical Instrument, Handforming, Marforming, Flowforming, Spinforming, Trinidad and Tobago