

Experimental Study to Determine LDR in Deep Drawing of C11000 Copper blanks

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ABSTRACT

The number of stages in design of multistage deep drawing process depends upon the limiting drawing ratio (LDR). The LDR is an essential design component for process engineers to minimize forming steps in multistage deep drawing process. The deep drawing experimental tests were conducted using the test-rig developed at research facility in the lab. The 80 mm die and punch set was used for producing copper C11000 cups of 1 mm thickness. The size range of blanks used was from 100 mm to 180 mm with 10 mm increment. The maximum punch load and the quality of the cups produced were recorded. The LDR was found using the concept of characteristic punch limit load. The LDR found through experiments was 1.8875.

Keywords: Deep drawing; Blank offset; FE simulation; PAM-STAMP

