Abstract

In this research a deep drawing simulation was carried out on circular blank with a diameter (32, 42.64, 52.18 and 77.44) mm and thickness (0.5 mm) and it was drawn to a cup through ANSYS5.4 program, using punch with diameter (20 mm) and conical die (by varying the angle of the conical die 5°, 10°, 15°, 25°). It has been studied the effect of the angle of die on the stress distribution, and the effect of friction on the stress distribution.

The results show that the less equivalent stresses occurs at angle (10°) of the conical die, i.e. the best design for the conical die when the angle of the die is (10°). Results are compared with the published one. Good agreement is evident. Also it was found that forming load increases with increasing of the angle and blank diameter.