

ABSTRACT

Electroplating is a metal coating process that utilizes electrical energy as a source of coating energy with an anode which will dissolve into electrolyte fluid and will then attach to the cathode, currently the electroplating process is very widely used and its development is very rapid. Electroplating process will increase thickness, hardness and corrosion resistance of coated objects.

The material in this study is the drum brake bushings and the coating process carried out on the bushings will use variations in voltage and time, a variation of 1.8V with a length of 30 minutes and 2.3V with a length of 40 minutes. In this study used several tests namely thickness, hardness and corrosion testing.

The results of the study show that the voltage and time of immersion used greatly affect the thickness value, the hardness of the corrosion rate of the bushings, the greatest thickness value is in the variation of 2.3V with a 40 minute immersion time with a thickness value of 54.41 μm and the smallest thickness value in the variation of 1, 8V with a dipping time of 30 minutes with a thickness value of 9.55 μm , the hardness values obtained from the two variations also showed different results at variations of 2.3V with 40 minutes obtained a hardness value of 536.6 HV compared with a variation of 1.8V with time 30 minutes with the hardness value obtained 442.3 HV, the two results of violence is very far when compared to objects without coating which only has a hardness value of 247.6 HV. From this study also obtained corrosion test results with the salt spray test method with ASTM B117-16 standard with a 12-hour test time obtained corrosion values during the test time of 2% on each variation.

Keyword : Electroplating, bushing drum brake, thickness, hardness, salt spray test.