

SUMMARY

Muhammad Afrianto Ramadani, Department of Mechanical Engineering, Faculty of Engineering, Brawijaya University, 13 April 2016, *The Effect of Plate Temperature on formability on Hot Rolling of Aluminium - Magnesium Cast*, Supervisor: Wahyono Suprpto and Eko Siswanto.

Aluminium-magnesium is easily formed. If it is heated to the right temperature in the rolling process, then the defects will be getting minor. Hot rolling process changes the dimensions of the workpiece, while in process some defects might appear such as flatness, alligatoring, disability broken and flawed mold defects. It is need to do a production process at the right temperature so that the workpiece has the right size and without defects.

The purpose of this study was conducted to determine the effect of the slab temperature on the formability on hot rolling of aluminium - magnesium castings. By testing the hot rolling on an aluminum-magnesium cast as the method used. Temperature used is between 275 ° C, 325 ° C, 375 ° C, 425 ° C and 475 ° C, magnesium levels used by 6%, by the repetition as 3 times. The formability can be seen on the length, width increase and a reduction in thickness after rolling. While the defects can be seen on the surface of the workpiece after rolling. Then, compare the size of the workpiece and the defects before rolling process.

Results obtained is the average ratio of the length, the width, and thickness reduction of 5,958: 1: 3.8. There is a length that deviates from the initial hypothesis that is at a temperature of 275 ° C and 425 ° C. This can happen because at the initial rolling the workpiece thickness is smaller than when it is at the other temperature. On average width, deviation occurs at a temperature of 375 ° C, 425 ° C and 475 ° C. This can be caused by an uneven or different load on the machine rollers. On average thickness, deviation is 275 ° C, 325 ° C and 425 ° C. At a temperature of 275 ° C average increase in thickness is very high, this can be caused by the specimen at this temperature has a smaller thickness than the other specimens.

Keywords: Hot rolling, defects, formability, temperature.