ABSTRACT

This cutting procedure looks simple, but actually inside a lot of problems - problems that must be addressed where the solution requires a wide - range of knowledge and science. In this study using semi-automatic cutting process with three different nozzle and three different speeds.

To determine the effect of oxidation on the results of the flame cutting of low carbon steel by using different nozzle numbers 0, number 1, number 2 and the speed of 200 mm / min, 250 mm / min, 280 mm / minute to find out the width of HAZ and hardness. The changes affect the shape and grain size of crystals which change the structure affects the mechanical properties of steel.

In the analysis, hardness test on the nozzle number or type 0 is the highest hardness at: 193.73 kgf / mm² with a speed of 200 mm / min and 3.3 mm wide HAZ. Whereas for the violence at the nozzle number or type 1 is the highest hardness at: 197.46 kgf / mm² with a speed of 200 mm / min and 4 mm wide HAZ. Whereas for the violence on the number or type of nozzle 2 is the highest hardness at: 202.52 kgf / mm² with a speed of 200 mm / min and 5 mm wide HAZ.

Key - words: cutting, nozzle, speed, hardness, haz, the width.