In the world today is known industry wide variety of welding such as weld asitelin, welding SMAW, TIG, MIG and others. Of the various kinds of welding is the most popular in the community is asitelin welding and SMAW welding. To get good results SMAW welding it is necessary to the proper welding parameters, strong currents and welding speeds.

This study aims to determine the characteristics of welding by using a current that varies between 100A, 130A and 160A. In any welding process will be testing hardness and toughness testing, this is done to obtain data for comparison.

The results for 5 mm thick steel plate with welded seam variation distance between 2 to 3 mm, it is known the value of toughness for currents higher than 100A to 130A and 160A current variation of 1.8098 joule/mm². while the results of hardness testing on the HAZ occurs high hardness values found on 130A welding current of 274 kg/mm².

**Keyword**: Distance seam, flow variations.