

ABSTRACT

Deformation is a form changed or shape of the welding object as a result of the shrinkage of the weld. Shrinkage due to welding cannot be avoided at the object or metal welded because the welding process required heating to high temperature, so that when the cooling occurs shrinkage that resulted changed in size of the weld joint or shape of welded metal being changed too, when the metal is doing weld has straight shape but after finish welded or cooling the metal being bent. So it need a way to minimize deformation of the welding. This study aims to determine the effect welding sequence of welding deformation occurring during the welding process of electric car chassis.

This study using specimen of low carbon steel that has hollow shaped with the serial number ST 37. Hollow has size of 4 x 4 cm. Parameter studies using 4 welding sequence variations. The other parameters, welding using MIG welding machine with the welding current setting of 80 A and welding voltage of 22 volts, and a speed welding of 4 mm / s. Testing is done by measuring the deformation using dial gauge. As well as testing the temperature at a distance of 1 cm from the point of welding using a tool precision infrared thermometer.

Results of these tests indicate that the welding sequence variation number 4 that has a length of welds half of the width of the specimen resulting small welding deformation, as well as the greatest deformation occurs in weld sequence variation number 1. Testing also proved that the temperature of the welding sequence variation can affects in area of temperature measurement. It is seen the highest temperatures in the welding sequence variation number 1 and the lowest temperature on welding variation number 4.

Keywords: welding sequence, welding temperature, welding deformation, welding, MIG