ABSTRACT

Integrating chassis is the process to make a joint chassis type space frame which function to support the load of the body bus. Long member is used to integrate the front and back chassis. Material used for long member is STKM 13B *hollow pipes. Long member has to be integrated using butt joint MIG welding process because material length of* STKM 13B *is only 6 m and the long member length is more than 6 m. Long member as the basis for supporting the load of the bus has to have a good tensile stress. This study aims to determine welding MIG parameters to get optimal tensile strength on the butt joint long member which exceeds 440 MPa the tensile strees of base metal* (JIS G 3445).

This research was conducted by making 16 specimens strength test and 4 speciments hardness test. Welding parameters used were electrode diameter 0,8 mm with current 90 A, electrode diameter 0,8 mm with current 110 A, electrode diameter 1,0 mm with current 90 A, and electrode diameter 1,0 mm with current 110 A. The tests include tensile strength testing, Rockwell hardness testing, and microstructure testing using a metallurgical microscope.

The results shows that the most optimum tensile strength on the butt joint long member is using welding parameter electrode 1,0 mm with current 110 A. The resulted average tensile strength is 681,173 MPa.

Keywords: MIG Welding, Tensile Test, Long member