QUALITY WELDING EXPERIMENTAL STUDY WITH 120 AMPERES OF STONG CURRENT ON MEDIUM CARBON STEEL AISI 1045 TO ROTARY BENDING TYPE OF FATIGUE TEST

By

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ABSTRACT

In the industrial world steel is a material that is widely used. One of the widely used type of steel is AISI 1045 as the material of the shaft for the engine components maker. On its use, the axis of operation receive dynamic load and fluctuating in a long time. So that the winerable experienced a failure when used due to experiencing fatigue failure. The mechanism of fatigue failure have 3 phases, there are initial crack, crack propagation and fracture failure. The solution of shaft fracture is welding the broken shaft material the widely used type of method is shield metal arc welding.

To find out the fatigue strength value of AISI 1045 steel that affected the surface of roughness so can be done by performing testing using the rotary bending testing machine. As for the testing method is done by giving the variation of load by 20%, 30%, 40%, 50%, 60% and 70% of the ultimate tensile strengh value, as well as do macroscopic observation by taking action against the pattern of the fracture that occurs in the test specimens the test result shot that the value of the maximum fatigue strengh is able to accomplish is 180.405 cycle on the 20% loading (90,94 Mpa).

Keywords: *Fatigue Test, Rotary Bending, Medium Carbon Steel AISI 1045.*