

Study the Impact of Welding Poles Type on the Tensile Strength Steel of Low Alloys and High Resistance

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Abstract : The steel alloy Introduced after becoming carbon-steel does not meet the requirements of engineering industry; and it cannot be obtained tensile strength from carbon-steel higher than (700MPa), the low alloy steel enters in a lot of heavy engineering equipment parts, molds, agricultural equipment and other industry. In addition, that may be exposed to in-service failure, which may require returned to work, to do the repairs or maintenance by one of the welding methods available. The ability of steel weld determined through palpation of the cracks, which can reduce by many ways. These ways are often expensive and difficult to implement, perhaps the control to choose the type of electrode welding user is one of the easiest and least expensive applications. It has been welding the steel low alloys high resistance by manual metal arc (MMA), and by using a set of welding electrodes which varying in chemical composition and in their prices as well and test their effect on tensile strength. Results showed that using the poles of welding, which have a high proportion of iron powder and low hydrogen. The Tensile resistance is (484MPa) and the weld joint efficiency was (56.9%), but when (OK 47.04) electrode was used the tensile strength increased to (720MPa) and the weld joint efficiency to (84.7%). Using the cheapest electrode (OK 45.00) the weld joint efficiency did not exceed (24.2%), but when using the most expensive electrode (OK 91.28) the weld joint efficiency is (38.1%).

Keywords : steel low alloys high resistance, electrodes welding, tensile test

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