

Pengaruh Variasi Kuat Arus Pengelasan Smaw Terhadap Kekuatan Puntir Sambungan Las Baja St-41 (*The Effect of Variation of Smaw Welding Current on the Twisting Strength of St-41 Steel Welding Joints*). Pembimbing (Ir. Dwi Djoko Suranto, MT)

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ABSTRACT

Welding is a job that is most often used in the construction world and industry today. Welding is often used for the repair and maintenance of all metal tools, either as a process of filling cracks, joining, or cutting metal parts. The welding that is often used is Shielded Metal Arc Welding (SMAW). To determine the resistance of the welded joint, it is necessary to conduct a torsional strength test on the weld joint. The purpose of this research is to analyze the resistance of the ST-41 steel welded joint to the torque. This type of research uses experimental research. The object of this research is the torsional strength of the ST-41 steel weld joint. The results of the research obtained by the researcher were the torsional strength of the specimen with a welding current of 80 amperes with a value of 3.81 Nm, where 3 out of 5 specimens experienced fractures in the welding area. The torsional strength of the specimens with a welding current of 90 amperes with a value of 3.765 Nm, where there are 3 out of 5 specimens experiencing fractures in the welding area. The torsional strength of the specimens with a welding current of 100 amperes with a value of 3.93 Nm where the five specimens fractured the parent metal. The highest torsional strength was found in specimens with a welding current of 100 amperes with a value of 3.93 Nm. The torsional strength at 100 amperes is sufficient to melt the electrodes and produce a strong weld surface which results in high torsional strength and increases the strength of the joints from the welding results.

Keyword: *welded joints, torsional strength, ST-41 steel*