**Pengaruh Proses *Heat Treatment* Pengelasan SMAW (*Shield Metal Arc Welding)* Baja ASTM A36 Terhadap Kekuatan Tarik dan Struktur Mikro** *(The influence of Heat Treatment Process SMAW (Shield Metal Arc Welding) Steel ASTM A36 towards Tensile Strength and Micro Stucture).*Aditya Wahyu Pratama (*a chief counselor) and Adityo (as a member counselor)*

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## *ABSTRACT*

*Development in the construction field is not apart from welding process that is used to connect the material. The welding is a process to connect between two or more material by using heat or pressure. The technique in selecting welding flow has important role in the result of welding characteristic. The purpose of this reseach is to know the influence of technique variations of welding flow, that is flow 60 A, 75 A, and 90 A. The existence of heat treatment process causes the alteration of micro structure and tensile strength to the steel ASTM A36. Based on the result of the research that was conducted to the low steel carbon testing ASTM A36 found that the process of heat treatment gives the real influence towards the score of tensile test. The highest score of tensile test is the flow 75 ampere without heat treatment process by score 424,3 N/mm². It happens since without heat treatment process and fast cooling make the steel or that material become tough, comparing with the specimen which uses heat treatment and fast cooling, it makes the matter become fragible and easy to be broken. In 500 X enlargement shows that the composition of steel ASTM A36 is ferrite (bright color) and perlit (dark color), it happens because it has heat treatment process in furnace by temperature 900° C*

***Key words:*** *Welding Flow, Heat Treatmen Process, SMAW Welding, Tensile Test, Micro Structure.*