

**ANALISIS PARAMETER PENGELASAN SMAW  
TERHADAP KEKUATAN SAMBUNGAN PADA  
PENGELASAN MATERIAL ASTM A36 DENGAN POSISI  
VERTIKEL 3G UNTUK PENGELASAN BAK MOBIL  
MITSUBISHI TRAILER 6D40**

Nama : Rian Putra  
Nim : 2204211292  
Dosen Pembimbing : Imran.,S.pd.,M.T.

***ABSTRACT***

*This study aims to analyze the effect of Shielded Metal Arc Welding (SMAW) welding parameters on the strength of welded joints in ASTM A36 steel material with a 3G vertical position, specifically for the application of welding the Mitsubishi Trailer 6D40 car body. The parameters tested included variations in electric current and electrode types (E6013, E7016, and E7018) using the Taguchi orthogonal design L9 method. Joint strength testing was carried out through a tensile test to determine the maximum strength value of each parameter combination. The results showed that the optimal parameter combination was obtained by using a current of 120 A and an E7018 electrode, resulting in the highest tensile strength of 56.29 kN. Signal-to-Noise Ratio analysis and ANOVA indicated that the electrode type was the most dominant factor affecting the strength of the welded joint. These findings provide an important contribution to improving the quality of the welding process and can be a reference in the manufacturing and automotive industries to produce strong, efficient, and economical welded joints. Keywords: SMAW Welding, ASTM A36, 3G Position, Electrode, Current, Tensile Strength, Taguchi Method.*

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