

DETERMINING WELDING COST FOR A SINGLE-V GROOVE WELD

Mark Mruzeczek Welding Engineer Mruzeczek Welding Engineering	Project: AWS Board Company: Subject: MMAW Example Welding process(es) Used: SMAW	Base Material: CS Product Form: Plate Filler Material: E71T-1 Trade Name: Lincoln	Date: 10/22/07 Page: 1 of 3 Choose Units <input type="radio"/> English Units <input checked="" type="radio"/> Metric Units For This Sheet
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Please choose units before you enter data into the fields below

Process 1		Process 2	
Thickness (mm) Height of H (mm) Root Opening (mm) Root Face (mm) Filler material Process Gas Used Amps Volts Wire Feed (m/min) Electrode Diam. (mm) Joint Angle (deg) Total Weld Length (m) Travel Speed (m/min) Gas Flow Rate (L/min) Welder Efficiency Cost Electrode (\$/kg) Labor Rate Cost of Gas Gas Cylinder Size (m^3) Power Cost Cost of Flux (\$/kg)	14 mm 1.000 mm 2 mm 2 mm Carbon Steel ▼ SMAW (14" Stick) ▼ N/A ▼ 130 A 21 V 0 m/min 3.200 mm 70 deg 1.00 m 0.127 m/min 0 L/min 30% ▼ 4.96 \$/kg 45.00 \$/hr - \$/bottle 0 m^3 0.20 \$/kwh - \$/kg		14 mm 1 mm 2 mm 2 mm Carbon Steel ▼ FCAW (Gas) ▼ 75Ar-25C02 ▼ 250 A 27 V 8.382 m/min 1.143 mm 70 deg 1.00 m 0.254 m/min 17 L/min 45% ▼ 7.19 \$/kg 45.00 \$/hr 40.00 \$/bottle 9.34 m^3 0.20 \$/kwh - \$/kg
<u>Scroll Down To See Results</u>			

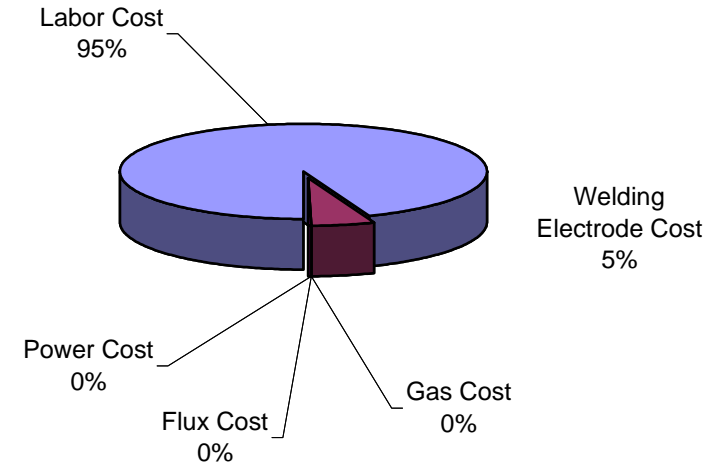
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WELDING COST OUTPUT FOR A SINGLE-V GROOVE WELD

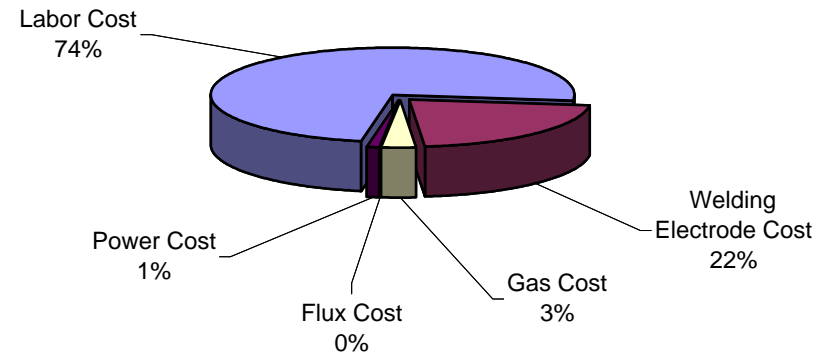
OUTPUT FOR Process 1

Amount of filler metal needed	1.74 kg
Number of passes per joint ~	7
Amount of shielding gas	0.00 m ³
Number of Gas Bottles Required	N/A
Actual welding time	3.29 hr
Deposition Rate	1.12 kg/hr
Labor Cost	\$147.95
Welding Electrode Cost	\$8.61
Gas Cost	\$-
Flux Cost	\$ -
Power Cost	\$ 0.54
Initial Cost	\$157.10
Final Cost	\$157.10
Total cost per meter of weld	157.10 \$/m
Filler cost per meter of weld	8.61 \$/m
Flux cost per meter of weld	- \$/m
Gas cost per meter of weld	- \$/m
Labor cost per meter of weld	147.95 \$/m
Shift Productivity	2.70 kg welded in 8 hr



OUTPUT FOR Process 2

Amount of filler metal needed	1 kg
Number of passes per joint ~	6
Amount of shielding gas	0.31 m ³
Number of Gas Bottles Required	1
Actual welding time	0.69 hr
Deposition Rate	3.56 kg/hr
Labor Cost	\$31.14
Welding Electrode Cost	\$9.06
Gas Cost	\$1.32
Flux Cost	\$ -
Power Cost	\$ 0.42
Initial Cost	\$41.94
Final Cost	\$41.94
Total cost per meter of weld	41.94 \$/m
Filler cost per meter of weld	9.06 \$/m
Flux cost per meter of weld	- \$/m
Gas cost per meter of weld	1.32 \$/m
Labor cost per meter of weld	31.14 \$/m
Shift Productivity	12.83 kg welded in 8 hr



FCAW (Gas) Provides a 73.31% Savings Relative To The SMAW (14" Stick)

PERFORMANCE AND COST COMPARISONS

