

# 05 05 Common Work Results for Metals

## 05 05 21 – Fastening Methods for Metal

05 05 21.15 Drilling Steel		Daily Crew	Output	Labor Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1960	3/4" diameter	1 Sswk	80	.100	Ea.	.16	6.20		6.36	9.70
1965	For each additional 1/4" depth, add		240	.033		.16	2.06		2.22	3.35
1970	7/8" diameter		72	.111		.19	6.85		7.04	10.80
1975	For each additional 1/4" depth, add		216	.037		.19	2.29		2.48	3.73
1980	1" diameter		64	.125		.28	7.75		8.03	12.20
1985	For each additional 1/4" depth, add		192	.042		.28	2.58		2.86	4.27
1990	For drilling up, add						40%			

## 05 05 21.90 Welding Steel

0010	WELDING STEEL, Structural	R050521-20								
0020	Field welding, 1/8" E6011, cost per welder, no operating engineer	E-14	8	1	Hr.	6.40	64	18.40	88.80	126
0200	With 1/2 operating engineer	E-13	8	1.500		6.40	92.50	18.40	117.30	169
0300	With 1 operating engineer	E-12	8	2		6.40	121	18.40	145.80	211
0500	With no operating engineer, 2# weld rod per ton	E-14	8	1	Ton	6.40	64	18.40	88.80	126
0600	8# E6011 per ton	"	2	4		25.50	256	73.50	355	505
0800	With one operating engineer per welder, 2# E6011 per ton	E-12	8	2		6.40	121	18.40	145.80	211
0900	8# E6011 per ton	"	2	8		25.50	485	73.50	584	845
1200	Continuous fillet, down welding									
1300	Single pass, 1/8" thick, 0.1#/L.F.	E-14	150	.053	L.F.	.32	3.41	.98	4.71	6.70
1400	3/16" thick, 0.2#/L.F.		75	.107		.64	6.80	1.96	9.40	13.35
1500	1/4" thick, 0.3#/L.F.		50	.160		.96	10.25	2.95	14.16	20
1610	5/16" thick, 0.4#/L.F.		38	.211		1.28	13.45	3.88	18.61	26
1800	3 passes, 3/8" thick, 0.5#/L.F.		30	.267		1.60	17.05	4.91	23.56	33.50
2010	4 passes, 1/2" thick, 0.7#/L.F.		22	.364		2.24	23.50	6.70	32.44	46
2200	5 to 6 passes, 3/4" thick, 1.3#/L.F.		12	.667		4.16	42.50	12.30	58.96	83.50
2400	8 to 11 passes, 1" thick, 2.4#/L.F.		6	1.333		7.65	85.50	24.50	117.65	166
2600	For vertical joint welding, add						20%			
2700	Overhead joint welding, add						300%			
2900	For semi-automatic welding, obstructed joints, deduct						5%			
3000	Exposed joints, deduct						15%			
4000	Cleaning and welding plates, bars, or rods									
4010	to existing beams, columns, or trusses	E-14	12	.667	L.F.	1.60	42.50	12.30	56.40	81

## 05 05 23 – Metal Fastenings

### 05 05 23.10 Bolts and Hex Nuts

0010	BOLTS & HEX NUTS, Steel, A307									
0100	1/4" diameter, 1/2" long	G	1 Sswk	140	.057	Ea.	.08	3.53	3.61	5.55
0200	1" long	G		140	.057		.09	3.53	3.62	5.55
0300	2" long	G		130	.062		.12	3.81	3.93	6
0400	3" long	G		130	.062		.18	3.81	3.99	6.05
0500	4" long	G		120	.067		.20	4.12	4.32	6.55
0600	3/8" diameter, 1" long	G		130	.062		.16	3.81	3.97	6.05
0700	2" long	G		130	.062		.21	3.81	4.02	6.10
0800	3" long	G		120	.067		.28	4.12	4.40	6.65
0900	4" long	G		120	.067		.36	4.12	4.48	6.75
1000	5" long	G		115	.070		.45	4.30	4.75	7.15
1100	1/2" diameter, 1-1/2" long	G		120	.067		.43	4.12	4.55	6.80
1200	2" long	G		120	.067		.49	4.12	4.61	6.90
1300	4" long	G		115	.070		.78	4.30	5.08	7.50
1400	6" long	G		110	.073		1.08	4.50	5.58	8.15
1500	8" long	G		105	.076		1.42	4.71	6.13	8.80
1600	5/8" diameter, 1-1/2" long	G		120	.067		1.01	4.12	5.13	7.45
1700	2" long	G	1 Sswk	120	.067	Ea.	1.11	4.12	5.23	7.60
1800	4" long	G		115	.070		1.61	4.30	5.91	8.40