Arc Welding - Process Overview

(Data based on standard Industrial practices)

ador
peace of mind™

S.N.	Key Features	MMAW (Manual Metal Arc Welding)	GMAW (Gas Metal Arc Welding)	FCAW (Flux-Cored Arc Welding)	GTAW (Gas Tungsten Arc Welding)	SAW (Submerged Arc Welding)
	Common dia/Ø of consumable, mm	2.5, 3.15, **4.0**, 5.0	**1.2**, 1.6	**1.2**, 1.6	**2.4**, 3.2	1.6, 3.15, **4.0**
1	Cost of welding equipment	Low	Medium	Medium	Medium	High
2	Cost of welding consumable	Medium	Medium	Medium to High	High	Medium
3	Availability of welding consumable	Easy	Medium	Medium	Medium	Medium
4	Requirement of skill for welder	Less	Medium	High	V. High	Medium
5	Ease of using the welding process	Easy	Medium	Medium	Difficult	Medium
6	Suitability in welding positions	All	F, H, VU	All	All	F, H
7	On-sight welding	Easy	Medium	Medium	Medium	Difficult
8	Continuity in welding	Less	High	High	Less	Higher
9	Welding speed, mm/ minute (The speed at which welding is done.)	140	200	200	Slowest	500
10	Deposition efficiency, % (Weight ratio of weld metal & consumable)	65	90	85	100	100
11	Effective arcing time, % (% of time spent on actual welding.)	35	45	45	Not Applicable	50
12	Arcing time/ 8 hrs shift, hour (Actual welding time in 8 hrs shift.)	2.8	3.6	3.6	Not Applicable	4.0
13	Deposition rate, kg/ hr (Weight of weld metal deposited/hr.)	1.5	3.4	3.5	Not Applicable	7.0
14	Deposition/ 8 hrs shift, kg (Actual weld metal deposited in 8 hrs shift)	**4.2**	**12.24**	**12.6**	**Not Applicable**	**28.0**
15	Ease to increase deposition rate	Only increasing dia/Ø	Using Ar-CO2 gas	Using Ar-CO2 gas	Not Applicable	Using multi-wire

Notes: (**All position** welding means suitable to weld **F**: Flat, **H**: Horizontal, **OH**: Overhead, **VD**: Vertical down, **VU**: Vertical up – in all these positions)

care@adorians.com | www.adorwelding.com