

Tube fitting assembly - weld estimate

Process GTAW root + GMAW fill labour \$25/h wire \$3/kg 25 min per dia-inch efficiency 90%

#	Type	At	Partner	Size	Len mm	Dia-in	Wire g	Min	Cost \$
J1	excluded	Ball valve - bolted interfac..	Pipe 1-1/2-1	1-1/2					
J2	excluded	Ball valve - bolted interfac..	Pipe 1-1/2-1 (1)	1-1/2					
J3	Slip-on (2 fillets)	Inlet slip-on flange	Pipe 1-1/2-1	1-1/2	303	1.50	20	38	15.68
J4	Slip-on (2 fillets)	Outlet slip-on flange	Pipe 1-1/2-1 (1)	1-1/2	303	1.50	20	38	15.68
J5	Butt weld	Equal tee	Pipe 1-1/2-1 (1)	1-1/2	152	1.50	23	38	15.69
J6	Butt weld	Equal tee	Pipe 1-1/2-1 (2)	1-1/2	152	1.50	23	38	15.69
J7	Butt weld	Equal tee	Pipe 1-1/2-1 (4)	1-1/2	152	1.50	23	38	15.69
J8	Butt weld	90 degree long-radius elb..	Pipe 1-1/2-1 (2)	1-1/2	152	1.50	23	38	15.69
J9	Butt weld	90 degree long-radius elb..	Pipe 1-1/2-1 (3)	1-1/2	152	1.50	23	38	15.69
J10	Butt weld	Pipe 1-1/2-1 (4)	Pipe 1-1/2-1 (5)	1-1/2	152	1.50	23	38	15.69
TOTAL 8 joints					1516	12.00	175	300	125.52

Summary by type and size

Type	Size	Qty	Dia-inch	Len mm
Slip-on flange (2 fillets)	1-1/2	2	3.00	606
Butt weld	1-1/2	6	9.00	910

Deposit model: butt = single-V 60 deg, 2 mm root + cap; fillet leg = wall (min 3 mm) x 1.10; set-on branch = saddle curve. Dia-inch = NPS x joints x type factor (butt 1.0, socket 0.75, slip-on 1.0, set-on 1.5).