

Steel Fillet Weld Calculator for boat 38-39ft (~ 11.5-12m)

Weight of steel	kg/m ³	lbs/ft ³
	7850	490
	g/mm ³	lbs/in ³
	0.008	0.284

Conversion coefficient 1m → Ft	3.28
Conversion coefficient 1kg → Pound	2.21

	mm	in.
Material 1/8"	3.175	0.125
Material 3/16"	4.775	0.188
Material 1/4"	6.350	0.250
Material 1/2"	12.700	0.500

	Volume mm ³	Volume in ³	Weight g/mm ³	Weight Lb/in ³	+20% g/mm ³	+20% Lb/in ³
Fillet Leg Size= 1/8"	5.040	0.008	0.040	0.002	0.047	0.003
Fillet Leg Size = 3/16"	11.400	0.018	0.089	0.005	0.107	0.006
Fillet, Leg Size = 1/4"	20.161	0.031	0.158	0.009	0.190	0.011
Fillet, Leg Size = 1/2"	80.645	0.125	0.633	0.035	0.760	0.043

Note: Minimum Fillet Weld Size for metal thickness =< 1/4" is **1/8"** (for Dynamically Loaded Structures is **3/16"**) - Single pass weld

Note: Minimum Fillet Weld Size for metal thickness =< 1/2" is **3/16"**, for 1/2" to 3/4" size is **1/4"** - Single pass weld

Welding length Total = 380m, ~ 15000 in.	mm	in.
	380,000	14,960

Welding length	mm	in.	Metal Weight kg	Metal Weight Lbs	Electrode Weight kg	Electrode Weight Lbs
Hull, transom 3/16" = ~ 120 m, Leg 3/16"	120,000	4,724	12.9	28.4	25.77	56.82
Deck, Cabin, PilotHouse, FootWell 1/8" = ~ 120 m, Leg 1/8"	120,000	4,724	5.7	12.6	11.4	25.12
Tween Keels (both) 1/4", 1/2" = ~ 80 m, Leg 1/4", 1/2" (50/50)	80,000	3,150	38.0	83.7	75.97	167.46
Tank top 3/16" = ~ 20 m, Leg 3/16"	20,000	787	2.1	4.7	4.3	9.47
Skeg, Rudder 1/8" = ~ 40m, Leg 1/8"	40,000	1,575	1.9	4.2	3.8	8.37
					121.23	267.24
Total Deposited metal's Weight			60.6	133.6		
Total Electrode weight (assuming 50% deposition rate, including loses)					121.23	267.24