

# Recommended Winding Tensions

Below are recommended winding tension for round magnet wire with Copper and Aluminum conductors. They are strictly recommendations and it is suggested that you use your own validation tests to ensure that the wire is not stretched during your production process.

SIZE (AWG)	RECOMMENDED WINDING TENSIONS FOR ROUND COPPER AND ALUMINUM CONDUCTORS								SIZE (AWG)
	COPPER				ALUMINUM				
	Minimum		Maximum		Minimum		Maximum		
	lbs / oz	kg / g	lbs / oz	kg / g	lbs / oz	kg / g	lbs / oz	kg / g	
10	61 lbs	28 kg	82 lbs	37 kg	12 lbs	6 kg	22 lbs	10 kg	10
11	48	22	65	29	10	4	18	8	11
12	38	17	51	23	8	3	14	6	12
13	31	14	41	18	6	3	11	5	13
14	24	11	32	15	5	2	9	4	14
15	19	8.7	26	12	4	2	7	3	15
16	15	6.9	20	9.2	3	1	6	3	16
17	12	5.5	16	7.3	2	1	4	2	17
18	10	4.3	13	5.8	2	1	4	2	18
19	8	3.4	10	4.6	2	1	3	1	19
20	6	2.7	8	3.6	1.25	.55	2	2	20
21	5	2.2	6	2.9	1	.43	1.8	0.8	21
22	4	1.7	5	2.3	0.8	.34	1.4	0.6	22
23	3	1.4	4	1.8	0.6	.27	1.1	0.5	23
24	2	1.1	3	1.4	0.5	.22	.9	0.4	24
25	2	0.9	3	1.1	0.4	.17	.7	0.3	25
26	1	0.7	2	0.9	0.3	.14	.5	0.2	26
27	1	0.5	2	0.7	0.2	.11	.4	0.2	27
28	15 oz	425 g	20 oz	565 g	3 oz	85 g	6 oz	160 g	28
29	12	340	16	455	2.5	68	4.5	125	29
30	9	270	13	360	2	54	3.5	99	30
31	7	210	10	280	1.5	42	2.8	78	31
32	6	170	8	290	1.20	34	2.20	63	32
33	5	135	6	180	.95	27	1.75	49	33
34	4	105	5	140	.75	21	1.40	39	34
35	3	85	4	110	.60	17	1.10	31	35
36	2	65	3	90	.45	13	.85	24	36
37	2	55	3	70	.38	11	.71	20	37
38	2	45	2	55	.29	8.6	.56	16	38
39	1.2	35	1.5	45	.23	6.5	.42	12	39
40	0.9	25	1.2	35	.18	5.1	.33	9.4	40
41	0.7	20	1.0	28	.15	4.2	.27	7.7	41
42	0.6	17	0.8	22	.12	3.3	.22	6.1	42
43	0.5	13	0.6	17	.09	2.6	.17	4.7	43
44	0.4	10	0.5	13	.07	2.1	.14	3.9	44

Maximum value above based on yield strength of fully annealed copper wire.  
Winding tensions higher than the stated maximums may cause higher resistance values.