

Twisted Magnet Wire cont.

Litz Wire

The term "Litz wire" is derived from the German word Litzendraht, meaning "woven wire." Generally defined, it is a wire constructed of individually film-insulated wires bunched or braided together in a uniform pattern of twists and length of lay.

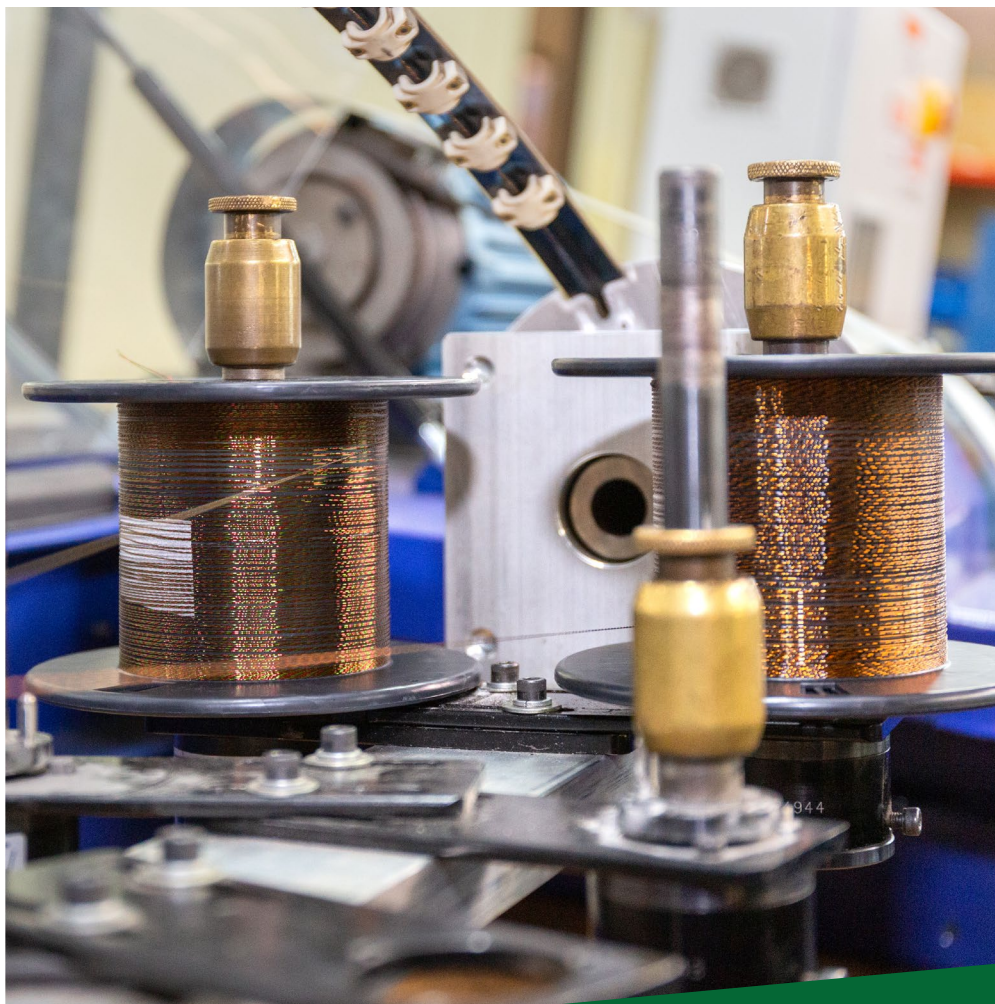
The multistrand configuration minimizes the power losses otherwise encountered in a solid conductor due to the "skin effect" or the tendency of radio frequency current to be concentrated at the surface of the conductor.

In order to counteract this effect, it is necessary to increase the amount of surface area without appreciably increasing the size of the conductor. It is also essential to position each individual strand in the Litz construction in a uniform pattern, moving from the center to the outside and back in a given length.

Even properly constructed Litz wires will exhibit some skin effect due to the limitations of stranding. Wires intended for higher frequency ranges require more strands of a finer gauge size than Litz wires of equal cross-sectional area, but composed of fewer and larger strands.

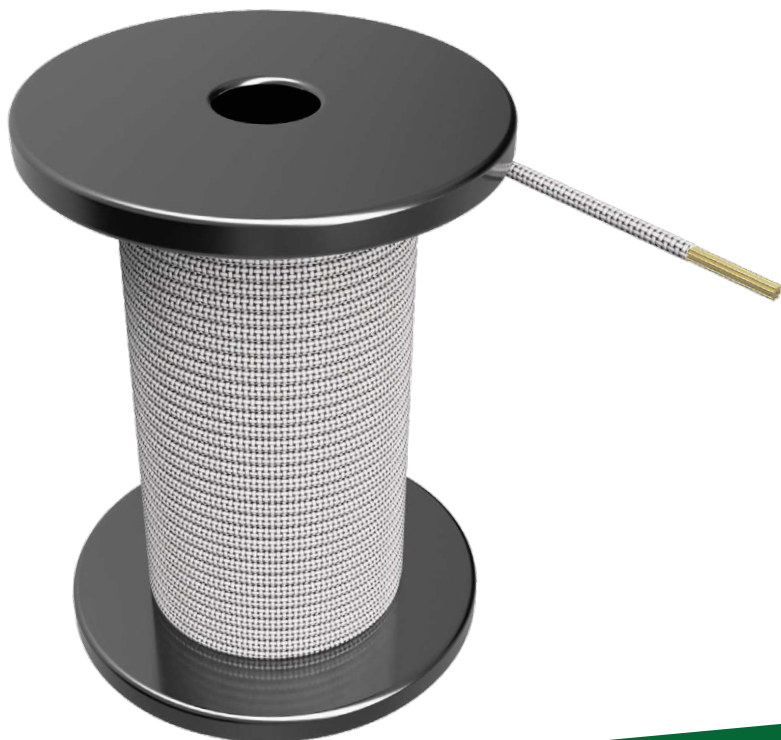
Polyurethane and Polyurethane Nylon are the films most often used for insulating individual strands because of their low electrical losses and their solderability. Other insulations shown on pages 4 and 5 can also be used. Litz wires are generally further insulated with a single or double wrap or serving of a textile - typically nylon - but are also available unserved.

The data that follows covers a broad range of sizes but is not intended to represent all possible constructions available. Inquire as to particular Litz wire constructions and allow us to provide you with wire to meet your specifications.

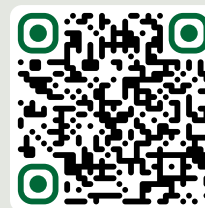


					UNSERVED				SERVED	
					SINGLE BUILD		HEAVY BUILD			
# OF STRANDS	SIZE (AWG)	CIRCULAR MILS	NEAREST AWG EQUIV. (CIR. MILS)	RESISTANCE (OHMS PER 1000 FT. AT 20°C)	NOMINAL O.D. (INCHES)	FEET PER POUND	NOMINAL O.D. (INCHES)	FEET PER POUND	NOMINAL O.D. (INCHES)	FEET PER POUND
10	34	397	24	26.13	0.026	798	0.027	784	0.029	770
50	34	1,985	17	5.226	0.057	162	0.061	162	0.065	161
100	34	3,969	14	2.613	0.081	81	0.087	81.3	0.092	81.1
200	34	7,938	11	1.307	0.114	41	0.122	40.7	0.131	40.7
10	40	96	30	108	0.013	3,282	0.014	3,212	0.015	3,140
50	40	481	23.5	21.58	0.029	670	0.031	667	0.033	664
100	40	961	20.5	10.79	0.040	336	0.044	335	0.047	335
500	40	4,805	13.5	2.158	0.090	67	0.098	67.3	0.106	67.3
1,000	40	9,610	10.5	1.079	0.128	34	0.139	33.7	0.15	33.7
10	44	40	34	259	0.008	7,849	0.009	7,674	0.010	7,493
100	44	400	24	25.93	0.027	807	0.029	805	0.031	803
500	44	2,000	17	5.186	0.059	162	0.065	162	0.070	162
1,000	44	4,000	14	2.593	0.084	81	0.091	80.9	0.099	80.9
2,000	44	8,000	11	1.297	0.119	40	0.129	40.5	0.139	40.5
10	48	15	38	675	0.005	20,511	0.006	19,963	0.006	19,197
100	48	154	28	67.45	0.016	2,101	0.018	2,095	0.020	2,086
500	48	770	21	13.49	0.036	421	0.040	421	0.045	420
1,000	48	1,540	18	6.745	0.051	211	0.057	211	0.064	210
2,000	48	3,080	15.5	3.373	0.072	105	0.080	105	0.090	105

Our Litz wire calculator provides Litz wire characteristics for sizes 18 to 43 AWG.



To view the Litz wire calculator
scan the QR code



or please visit
<https://mwswire.com/litz-wire-tool>