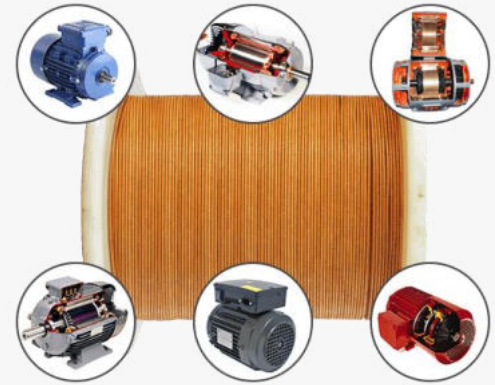




Class 180 Glass Fiber Covered High-Temperature Round Copper Magnet Wire

1. Specifications

Insulation materials	Polyester Glass Fiber Film(Organic Varnish Treated)
Thermal Class	180
Conductor	Copper
Insulation thickness	Single/Heavy
Certificate	MW-50C



2. Wire Types

Class 180 Glass Fiber Covered High-Temperature Bare Round Copper Magnet Wire

Class 180 Glass Fiber Covered High-Temperature Film-Insulated Round Copper Magnet Wire

Class 180 Glass Fiber Covered High-Temperature Organic Varnish Treated Bare Round Copper Magnet Wire

Class 180 Glass Fiber Covered High-Temperature Organic Varnish Treated Film-Insulated Round Copper Magnet

3. Dimensions

Table1 (mm) Dimensions for Single Glass Fiber Covered Round Bare Single Film-Coated and Heavy Film-Coated Wire

AWG Size	Bare Wire Diameter			Minimum Increase Single Glass Fiber Covering	Maximum Overall Diameter, Single Glass Fiber Covered			AWG Size
	Minimum	Nominal	Maximum		Bare	Single Film	Heavy Film	
4/0	11.567	11.684	11.801	0.114	11.979	-	-	4/0
3/0	10.300	10.404	10.508	0.114	10.686	-	-	3/0
2/0	9.174	9.266	9.357	0.114	9.535	-	-	2/0
1/0	8.171	8.252	8.334	0.114	8.512	-	-	1/0
1	7.275	7.348	7.422	0.114	7.600	-	-	1
2	6.477	6.543	6.609	0.114	6.787	-	-	2
3	5.768	5.827	5.885	0.114	6.063	-	-	3
4	5.138	5.189	5.240	0.114	5.418	-	5.507	4





5	4.575	4.620	4.666	0.114	4.844	-	4.933	5
6	4.074	4.115	4.155	0.114	4.333	-	4.422	6
7	3.630	3.665	3.701	0.114	3.879	-	3.965	7
8	3.231	3.264	3.297	0.114	3.475	-	3.561	8
9	2.878	2.906	2.934	0.114	3.112	-	3.198	9
10	2.563	2.588	2.614	0.102	2.766	-	2.847	10
11	2.281	2.304	2.327	0.102	2.479	-	2.560	11
12	2.032	2.052	2.073	0.102	2.225	-	2.304	12
13	1.811	1.829	1.847	0.102	1.999	-	2.075	13
14	1.613	1.628	1.643	0.102	1.796	1.844	1.885	14
15	1.435	1.450	1.466	0.102	1.618	1.661	1.699	15
16	1.278	1.290	1.303	0.102	1.455	1.501	1.537	16
17	1.138	1.151	1.163	0.102	1.316	1.359	1.392	17
18	1.013	1.024	1.034	0.102	1.186	1.229	1.262	18
19	0.902	0.912	0.922	0.102	1.074	1.115	1.146	19
20	0.805	0.813	0.820	0.102	0.973	1.013	1.044	20
21	0.716	0.724	0.731	0.102	0.884	0.922	0.950	21
22	0.635	0.643	0.650	0.102	0.803	0.838	0.866	22
23	0.569	0.574	0.579	0.102	0.732	0.770	0.795	23
24	0.505	0.511	0.516	0.064	0.617	0.653	0.678	24
25	0.450	0.455	0.460	0.064	0.561	0.594	0.617	25
26	0.399	0.404	0.409	0.064	0.511	0.541	0.564	26
27	0.358	0.361	0.363	0.064	0.465	0.498	0.518	27
28	0.318	0.320	0.323	0.064	0.424	0.457	0.475	28
29	0.284	0.287	0.290	0.064	0.391	0.422	0.439	29
30	0.251	0.254	0.257	0.064	0.358	0.386	0.404	30

Table2 (mm) Dimensions for Double Glass Fiber Covered Round Bare Single Film-Coated and Heavy Film-Coated Wire

AWG Size	Bare Wire Diameter			Minimum Increase Double Glass Fiber Covering	Maximum Overall Diameter, Double Glass Fiber Covered			AWG Size
	Minimum	Nominal	Maximum		Bare	Single Film	Heavy Film	
4/0	11.567	11.684	11.801	0.178	12.080	-	-	4/0
3/0	10.300	10.404	10.508	0.178	10.787	-	-	3/0
2/0	9.174	9.266	9.357	0.178	9.637	-	-	2/0
1/0	8.171	8.252	8.334	0.178	8.613	-	-	1/0
1	7.275	7.348	7.422	0.178	7.701	-	-	1
2	6.477	6.543	6.609	0.178	6.888	-	-	2
3	5.768	5.827	5.885	0.178	6.165	-	-	3
4	5.138	5.189	5.240	0.178	5.520	-	5.613	4
5	4.575	4.620	4.666	0.178	4.945	-	5.034	5
6	4.074	4.115	4.155	0.178	4.435	-	4.524	6





7	3.630	3.665	3.701	0.178	3.980	-	4.067	7
8	3.231	3.264	3.297	0.178	3.576	-	3.663	8
9	2.878	2.906	2.934	0.178	3.213	-	3.299	9
10	2.563	2.588	2.614	0.152	2.842	-	2.924	10
11	2.281	2.304	2.327	0.152	2.555	-	2.637	11
12	2.032	2.052	2.073	0.152	2.301	-	2.380	12
13	1.811	1.829	1.847	0.152	2.075	-	2.151	13
14	1.613	1.628	1.643	0.152	1.872	1.844	1.961	14
15	1.435	1.450	1.466	0.152	1.694	1.661	1.775	15
16	1.278	1.290	1.303	0.152	1.532	1.577	1.613	16
17	1.138	1.151	1.163	0.152	1.392	1.465	1.468	17
18	1.013	1.024	1.034	0.152	1.262	1.306	1.339	18
19	0.902	0.912	0.922	0.152	1.151	1.191	1.222	19
20	0.805	0.813	0.820	0.152	1.049	1.090	1.120	20
21	0.716	0.724	0.731	0.152	0.960	0.998	1.026	21
22	0.635	0.643	0.650	0.152	0.879	0.914	0.942	22
23	0.569	0.574	0.579	0.152	0.808	0.846	0.871	23
24	0.505	0.511	0.516	0.114	0.668	0.704	0.729	24
25	0.450	0.455	0.460	0.114	0.612	0.645	0.668	25
26	0.399	0.404	0.409	0.114	0.561	0.592	0.615	26
27	0.358	0.361	0.363	0.114	0.516	0.549	0.569	27
28	0.318	0.320	0.323	0.114	0.475	0.508	0.526	28
29	0.284	0.287	0.290	0.114	0.442	0.472	0.490	29
30	0.251	0.254	0.257	0.114	0.409	0.437	0.455	30

4. General Requirements

Properties	Requirement
DIMENSIONS	Single 4/0-30 AWG in accordance with Table1 Double 4/0-30 AWG in accordance with Table2





ADHERENCE AND FLEXIBILITY	Covering shall not open sufficiently to expose the bare or film-insulated wire after bending on mandrel sizes as Table3
ELONGATION	Not less than the values in Table4
SPRINGBACK	4/0-13 AWG glass fiber covered bare: not greater than 5° 4-13 AWG glass fiber covered film-insulated: not greater than 5.5°
DIELECTRIC BREAKDOWN	Not less than the Table5 *For polyester glass fiber covered wire having underlying film insulation, add the minimum breakdown voltage given in Part 3 for the film-insulated wire.

Table3

AWG Size	Mandrel Diameter
1/0 and larger	15d
1 to 30	10d

Table4 Minimum Dielectric Breakdown Voltage—Twisted Pair Method

AWG Size	Single Build or Type 1		Heavy Build or Type 2		Triple Build or Type 3		Quad Build		
	Standard	Polyamide Topcoat	Standard	Polyamide Topcoat	Standard	Polyamide Topcoat	Standard	Polyamide Topcoat	MW 16-C Quad
8	3740*	—	7000*	—	—	—	—	—	—
8.5	3740*	—	6800*	—	—	—	—	—	—
9	3740*	—	6800*	—	—	—	—	—	—
9.5	3740*	—	6800*	—	—	—	—	—	—
10	3740	—	6800	6120	—	—	—	—	—
10.5	3740	—	6600	5940	—	—	—	—	—
11	3740	—	6600	5940	—	—	—	—	—
11.5	3520	—	6600	5940	—	—	—	—	—
12	3520	—	6400	5760	—	—	—	—	—
12.5	3520	—	6400	5760	—	—	—	—	—
13	3520	—	6400	5760	—	—	—	—	—
13.5	3520	—	6400	5760	—	—	—	—	—
14	3520	3170	6330	5690	8450	7600	11000	9900	8840
14.5	3470	3130	6240	5620	8340	7510	10860	9770	8750
15	3430	3090	6160	5550	8230	7410	10720	9650	8660
15.5	3380	3050	6080	5470	8120	7310	10580	9520	8560
16	3340	3010	6000	5400	8020	7220	10440	9400	8470
16.5	3300	2970	5930	5330	7910	7120	10310	9280	8280
17	3250	2930	5850	5260	7810	7030	10170	9150	8290
17.5	3210	2890	5770	5200	7710	6940	10040	9040	8190
18	3170	2850	5700	5130	7610	6850	9910	8920	8100
18.5	3130	2820	5620	5060	7510	6760	9780	8800	8010



19	3090	2780	5550	4990	7410	6670	9650	8690	7920
19.5	3050	2740	5480	4930	7320	6580	9530	8570	7820
20	3010	2710	5410	4870	7220	6500	9400	8460	7730
20.5	2970	2670	5340	4800	7130	6410	9280	8350	7640
21	2930	2640	5270	4740	7030	6330	9160	8240	7550
21.5	2890	2600	5200	4680	6940	6250	9040	8140	7450
22	2850	2570	5130	4620	6850	6170	8920	8030	7360
22.5	2820	2540	5060	4560	6760	6090	8810	7930	7270
23	2780	2500	5000	4500	6670	6010	8690	7820	7180
23.5	2740	2470	4930	4440	6590	5930	8580	7720	7080
24	2710	2440	4870	4380	6500	5850	8470	7620	6990
24.5	2670	2410	4810	4320	6420	5780	8360	7520	6900
25	2640	2370	4740	4270	6330	5700	8250	7420	6810
25.5	2600	2340	4680	4210	6250	5630	8140	7330	6710
26	2570	2310	4620	4160	6170	5550	8040	7230	6620
26.5	2540	2280	4560	4100	6090	5480	7930	7140	6530
27	2500	2250	4500	4050	6010	5410	7830	7040	6440
27.5	2470	2220	4440	4000	5930	5340	7730	6950	6340
28	2440	2200	4380	3950	5860	5270	7630	6860	6250

Table5

AWG Size	Minimum Breakdown, Volts*	
	Single	Double
4/0-9.5	150	270
10-23.5	360	540
24-30	225	400

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郑州蓝普实业有限公司

Zhengzhou LP Industry CO., LTD.

Phone: 0086-19337889070

Web: <https://lpwindingwire.com>

Email: office@cnlpzz.com

Add: NO. 86 Jingsan Road, Jinshui District, Zhengzhou, China