



Class 200 Polyester Glass Fiber Covered Silicone Treated, Bare or Film-Insulated Round Copper Magnet Wire

1. Specifications

Insulation materials	Polyester Glass Fiber Film
Thermal Class	200
Conductor	Copper
Insulation thickness	Single/Double
Certificate	MW-47C



2. Dimensions

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

AWG Size	Bare Wire Diameter			Minimum Increase, Single Polyester Glass Fiber Covering	Maximum Overall Diameter, Single Polyester Glass Fiber Covered			AWG Size
	Minimum	Nominal	Maximum		Bare	Single Film	Heavy Film	
4/0	11.567	11.684	11.801	0.102	11.928	-	-	4/0
3/0	10.300	10.404	10.508	0.102	10.635	-	-	3/0
2/0	9.174	9.266	9.357	0.102	9.484	-	-	2/0
1/0	8.171	8.252	8.334	0.102	8.461	-	-	1/0
1	7.275	7.348	7.422	0.102	7.549	-	-	1
2	6.477	6.543	6.609	0.102	6.736	-	-	2
3	5.768	5.827	5.885	0.102	6.012	-	-	3
4	5.138	5.189	5.240	0.102	5.392	-	5.481	4
5	4.575	4.620	4.666	0.102	4.818	-	4.907	5
6	4.074	4.115	4.155	0.102	4.308	-	4.397	6
7	3.630	3.665	3.701	0.102	3.853	-	3.940	7
8	3.231	3.264	3.297	0.102	3.449	-	3.536	8
9	2.878	2.906	2.934	0.102	3.086	-	3.172	9
10	2.563	2.588	2.614	0.089	2.741	-	2.822	10
11	2.281	2.304	2.327	0.089	2.454	-	2.535	11
12	2.032	2.052	2.073	0.089	2.200	-	2.278	12

13	1.811	1.829	1.847	0.089	1.974	-	2.050	13
14	1.613	1.628	1.643	0.089	1.770	1.819	1.859	14
15	1.435	1.450	1.466	0.089	1.593	1.639	1.674	15
16	1.278	1.290	1.303	0.089	1.430	1.476	1.511	16
17	1.138	1.151	1.163	0.089	1.290	1.334	1.367	17
18	1.013	1.024	1.034	0.089	1.161	1.204	1.237	18
19	0.902	0.912	0.922	0.089	1.049	1.090	1.120	19
20	0.805	0.813	0.820	0.089	0.947	0.988	1.019	20
21	0.716	0.724	0.731	0.089	0.859	0.897	0.925	21
22	0.635	0.643	0.650	0.089	0.777	0.813	0.841	22
23	0.569	0.574	0.579	0.089	0.706	0.744	0.770	23
24	0.505	0.511	0.516	0.064	0.643	0.678	0.704	24
25	0.450	0.455	0.460	0.064	0.587	0.620	0.643	25
26	0.399	0.404	0.409	0.064	0.536	0.566	0.589	26
27	0.358	0.361	0.363	0.064	0.490	0.523	0.544	27
28	0.318	0.320	0.323	0.064	0.450	0.483	0.500	28
29	0.284	0.287	0.290	0.064	0.417	0.447	0.465	29
30	0.251	0.254	0.257	0.064	0.384	0.411	0.429	30

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

AWG Size	Bare Wire Diameter			Minimum Increase, Double Polyester Glass Fiber Covering	Maximum Overall Diameter, Double Polyester Glass Fiber Covered			AWG Size
	Minimum	Nominal	Maximum		Bare	Single Film	Heavy Film	
4/0	11.567	11.684	11.801	0.152	12.029	-	-	4/0
3/0	10.300	10.404	10.508	0.152	10.737	-	-	3/0
2/0	9.174	9.266	9.357	0.152	9.586	-	-	2/0
1/0	8.171	8.252	8.334	0.152	8.562	-	-	1/0
1	7.275	7.348	7.422	0.152	7.650	-	-	1
2	6.477	6.543	6.609	0.152	6.838	-	-	2
3	5.768	5.827	5.885	0.152	6.114	-	-	3
4	5.138	5.189	5.240	0.152	5.469	-	5.558	4
5	4.575	4.620	4.666	0.152	4.895	-	4.983	5
6	4.074	4.115	4.155	0.152	4.384	-	4.473	6
7	3.630	3.665	3.701	0.152	3.929	-	4.016	7
8	3.231	3.264	3.297	0.152	3.526	-	3.612	8
9	2.878	2.906	2.934	0.152	3.162	-	3.249	9
10	2.563	2.588	2.614	0.140	2.817	-	2.898	10

11	2.281	2.304	2.327	0.140	2.530	—	2.611	11
12	2.032	2.052	2.073	0.140	2.276	—	2.355	12
13	1.811	1.829	1.847	0.140	2.050	—	2.126	13
14	1.613	1.628	1.643	0.140	1.847	1.895	1.935	14
15	1.435	1.450	1.466	0.140	1.669	1.712	1.750	15
16	1.278	1.290	1.303	0.140	1.506	1.552	1.558	16
17	1.138	1.151	1.163	0.140	1.367	1.410	1.443	17
18	1.013	1.024	1.034	0.140	1.237	1.280	1.313	18
19	0.902	0.912	0.922	0.140	1.125	1.166	1.196	19
20	0.805	0.813	0.820	0.140	1.024	1.064	1.095	20
21	0.716	0.724	0.731	0.140	0.935	0.973	1.001	21
22	0.635	0.643	0.650	0.140	0.853	0.889	0.917	22
23	0.569	0.574	0.579	0.140	0.782	0.820	0.846	23
24	0.505	0.511	0.516	0.114	0.681	0.716	0.742	24
25	0.450	0.455	0.460	0.114	0.625	0.658	0.681	25
26	0.399	0.404	0.409	0.114	0.574	0.605	0.627	26
27	0.358	0.361	0.363	0.114	0.528	0.561	0.582	27
28	0.318	0.320	0.323	0.114	0.488	0.521	0.538	28
29	0.284	0.287	0.290	0.114	0.455	0.485	0.503	29
30	0.251	0.254	0.257	0.114	0.422	0.450	0.467	30



3.General Requirements

Properties	Requirement														
DIMENSIONS	Single 4-30 AWG in accordance with Table1 Double 4-30 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 follows: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>AWG Size</th> <th>Mandrel Diameter</th> </tr> </thead> <tbody> <tr> <td>4-9.5</td> <td>10d</td> </tr> <tr> <td>10-30</td> <td>5d</td> </tr> </tbody> </table> <p>After a specimen has been elongated 25% or to its breaking point, whichever is less, there shall be no loosening, fraying, or loss of adherence of the covering except at the point of rupture</p>	AWG Size	Mandrel Diameter	4-9.5	10d	10-30	5d								
AWG Size	Mandrel Diameter														
4-9.5	10d														
10-30	5d														
ELONGATION	Not less than the values of 10%														
SPRINGBACK	4/0-13 AWG polyester glass fiber covered bare: not greater than 5° 4-13 AWG polyester glass fiber covered film-insulated: not greater than 5.5°														
DIELECTRIC BREAKDOWN	Not less than the following: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">AWG Size</th> <th colspan="2">Minimum Breakdown, Volts*</th> </tr> <tr> <th>Single</th> <th>Double</th> </tr> </thead> <tbody> <tr> <td>4-9.5</td> <td>150</td> <td>270</td> </tr> <tr> <td>10-23.5</td> <td>360</td> <td>540</td> </tr> <tr> <td>24-30</td> <td>225</td> <td>400</td> </tr> </tbody> </table> <p>*For polyester glass fiber covered wire having underlying film insulation, add the minimum breakdown voltage given in Table3 for the film-insulated wire.</p>	AWG Size	Minimum Breakdown, Volts*		Single	Double	4-9.5	150	270	10-23.5	360	540	24-30	225	400
AWG Size	Minimum Breakdown, Volts*														
	Single	Double													
4-9.5	150	270													
10-23.5	360	540													
24-30	225	400													

Table3 Dielectric Breakdown, Minimum Voltage—Foil Method

AWG Size	Standard Round Film-Insulated Copper Wire	
	Single Build	Heavy Build
2	-	3800
2.5	-	3800
3	-	3800
3.5	-	3800
4	-	3700
4.5	-	3700
5	-	3700
5.5	-	3600
6	-	3600
6.5	-	3600
7	-	3500
7.5	-	3500
8	1870	3500
8.5	1870	3400
9	1870	3400
9.5	1870	3400

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