

Class 155 Polyester Glass Fiber Covered Heavy Film-Insulated Square Copper Magnet Wire

1. Specifications

| Insulation materials | Polyester Glass Fiber Film |
|----------------------|----------------------------|
| Thermal Class | 155 |
| Conductor | Copper |
| Insulation thickness | Single/Double/Heavy |
| Certificate | MW-46C |



2. Dimensions

Table 1 Heavy and Quad Film-Insulated Square Magnet Wire Increase in Dimensions Due to Film Coating (mm)

| B 1" (. 250() | Hea | avy | Quadruple | |
|-------------------------|------------------|-----------------|------------------|-----------------|
| Radii (±25%) Nominal | Minimum Increase | Maximum Overall | Minimum Increase | Maximum Overall |
| 1.00 | 0.080 | 7.549 | 0.127 | 7.600 |
| 1.00 | 0.080 | 6.736 | 0.127 | 6.787 |
| 1.00 | 0.080 | 6.012 | 0.127 | 6.063 |
| 1.00 | 0.080 | 5.367 | 0.127 | 5.418 |
| 1.00 | 0.080 | 4.793 | 0.127 | 4.844 |
| 0.80 | 0.080 | 4.282 | 0.127 | 4.333 |
| 0.80 | 0.080 | 3.828 | 0.127 | 3.879 |
| 0.80 | 0.080 | 3.424 | 0.127 | 3.475 |
| 0.67 | 0.080 | 3.061 | 0.127 | 3.112 |
| 0.67 | 0.080 | 2.741 | 0.127 | 2.791 |
| 0.50 | 0.080 | 2.456 | 0.127 | 2.507 |
| 0.50 | 0.080 | 2.205 | 0.127 | 2.256 |
| 0.40 | 0.080 | 1.981 | 0.127 | 2.032 |
| 0.40 | 0.080 | 1.781 | 0.127 | 1.831 |



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3. Dimensions

<u>Table 2</u> Single/Double Polyester Glass Fiber Covered, Bare or Heavy Film-Insulated Square Copper Magnet Wire—Minimum Increase and Maximum Overall Dimensions Due to Insulation (mm)

| Heavy Film | n-Coated Single | Heavy Film-In | sulated Double |
|-------------------------|-----------------|-------------------|-----------------|
| Polyester Glass Covered | | Glass Covered | |
| Minimum Increase | Maximum Overall | Minimum Increase* | Maximum Overall |
| | | | |
| 0.229 | 8.661 | 0.381 | 8.865 |
| 0.229 | 7.747 | 0.381 | 7.950 |
| 0.203 | 6.909 | 0.381 | 7.137 |
| 0.203 | 6.198 | 0.381 | 6.426 |
| 0.203 | 5.563 | 0.381 | 5.766 |
| 0.203 | 4.978 | 0.356 | 5.182 |
| 0.203 | 4.445 | 0.356 | 4.674 |
| 0.203 | 3.988 | 0.330 | 4.191 |
| 0.203 | 3.581 | 0.305 | 3.759 |
| 0.203 | 3.226 | 0.305 | 3.404 |
| 0.178 | 2.870 | 0.279 | 3.048 |
| 0.178 | 2.591 | 0.279 | 2.743 |
| 0.178 | 2.337 | 0.279 | 2.489 |
| 0.178 | 2.134 | 0.279 | 2.261 |
| 0.178 | 1.930 | 0.279 | 2.057 |

NOTE—This specification corresponds with IEC 60317-60-1 (under development)





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4.General Requirements

| Properties | Requirement | |
|---------------------------|--|--|
| DIMENSIONS | Square Wire: | |
| | 1. Radii in accordance with 0.40-1mm (±25%) | |
| | 2. Thickness and width tolerances in accordance with <u>Table 1</u> | |
| | 3. Dimensions and increase in thickness in accordance with <u>Table 2</u> | |
| ADHERENCE AND FLEXIBILITY | Single or Double with underlying film: no cracks visible in the film insulation | |
| | after 20% elongation. Examine with normal vision and without removing the | |
| | polyester glass fiber covering. | |
| | NOTE—The minimum thickness of the polyester glass fiber covering is 35% of the | |
| | maximum increase in dimensions calculated from: <u>Table 2</u> | |
| ELONGATION | Not less than 32% for a thickness of 0.049 in. (1.25 mm) and greater, or 30% for | |
| | a thickness less than 0.049 in. (1.25 mm) | |
| SPRINGBACK | Polyester glass fiber covered Heavy film-insulated: not greater than 5.5° | |
| DIELECTRIC BREAKDOWN | Not less than 90 V/mil (3543 V/mm) of the minimum thickness of the glass fiber | |
| | covering on one side plus the minimum breakdown given in Table 36 for the | |
| | film-insulated wire, if applicable. | |
| | NOTE—The minimum thickness of the glass fiber covering is 35% of the | |
| | maximum increase in dimensions calculated from: <u>Table 2</u> | |



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