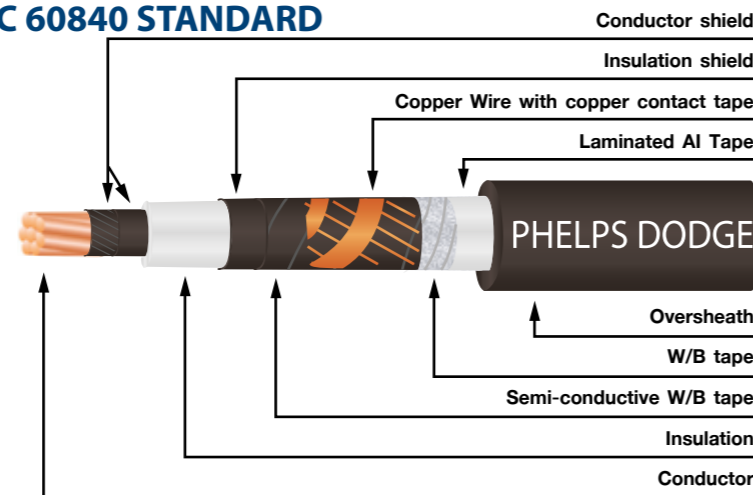


76/132 (145) kV COPPER CONDUCTOR WITH COPPER WIRE SHIELD AND LAMINATED ALUMINIUM TAPE

IEC 60840 STANDARD



APPLICATION :

Preferably used for urban networks. Suitable for use in duct, trays and direct burial in ground.

Advantage :

Light weight, small overall diameter and easy to bend.

Max. Conductor Temperature :

90 °C

AC TEST VOLTAGE :

190 kV (30 minutes)

REFERENCE STANDARD :

IEC 60840

CONSTRUCTION :

- Conductor : Round compact stranded or Milliken conductor
- Conductor shield : Semi-conducting tape and/or extruded semi-conducting cross-linked polyethylene
- Insulation : Cross-linked polyethylene
- Insulation shield : Semi-conducting cross-linked polyethylene
- Longitudinal water blocking layer : Semi-conductive water blocking tape
- Metallic shield : Annealed uncoated copper wire with copper contact tape
- Longitudinal water blocking layer : Water blocking tape
- Radial water barrier : Laminated aluminium tape
- Oversheath : Black PE (ST-7)

Cable Construction

| Nominal cross-sectional area mm ² | Diameter of conductor (Approx.) mm | Diameter over insulation (Approx.) mm | Nominal area of copper wire shield mm ² | Nominal thickness of Al tape mm | Nominal thickness of oversheath mm | Overall diameter (Approx.) mm | Cable weight (Approx.) kg/km | Standard packing m |
|---|---------------------------------------|--|---|------------------------------------|---------------------------------------|----------------------------------|---------------------------------|-----------------------|
| 240 | 18.2 | 54.5 | 220 | 0.2 | 3.0 | 70 | 7,265 | 1,000/R |
| 300 | 20.3 | 55.5 | 220 | 0.2 | 3.0 | 71 | 7,890 | 1,000/R |
| 400 | 23.0 | 56.5 | 220 | 0.2 | 3.1 | 72 | 8,665 | 1,000/R |
| 500 | 25.9 | 59.0 | 220 | 0.2 | 3.1 | 75 | 9,795 | 1,000/R |
| 630 | 29.9 | 64.0 | 220 | 0.2 | 3.3 | 80 | 11,540 | 1,000/R |
| 800 | 33.8 | 68.0 | 220 | 0.2 | 3.4 | 85 | 13,510 | 500/R |
| 1,000 | 39.8 | 75.0 | 220 | 0.2 | 3.6 | 92 | 16,010 | 500/R |
| 1,200 | 43.0 | 78.0 | 220 | 0.2 | 3.7 | 96 | 17,865 | 500/R |
| 1,000(M) | 39.1 | 75.0 | 220 | 0.2 | 3.6 | 93 | 15,990 | 500/R |
| 1,200(M) | 42.2 | 78.5 | 220 | 0.2 | 3.7 | 96 | 17,820 | 500/R |
| 1,400(M) | 45.7 | 83.0 | 220 | 0.2 | 3.8 | 101 | 20,075 | 500/R |
| 1,600(M) | 48.8 | 86.0 | 220 | 0.2 | 3.9 | 104 | 22,115 | 500/R |
| 1,800(M) | 51.6 | 88.5 | 220 | 0.2 | 4.0 | 107 | 24,065 | 500/R |
| 2,000(M) | 54.7 | 92.0 | 220 | 0.2 | 4.1 | 111 | 26,295 | 400/R |
| 2,500(M) | 61.1 | 99.0 | 220 | 0.2 | 4.4 | 119 | 31,565 | 400/R |

(M) is Milliken conductor

R= Packing in reel

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Electrical Properties and Current Rating (A)

| Nominal cross-sectional area mm ² | Maximum DC resistance of conductor at 20°C Ω/km | Minimum insulation resistance at 20°C MΩ-km | Current rating in air* (A) | | Current rating direct burial* (A) | | Current rating in PE duct in ground* (A) | |
|---|--|--|--------------------------------|-----------------------------|-----------------------------------|-------------|--|-------------|
| | | | Trefoil ≥0.5xD _c | Flat ≥0.5xD _c | Trefoil 1 m | Flat 1 m | Trefoil 1 m | Flat 1 m |
| 240 | 0.0754 | 11,860 | 594 | 669 | 424 | 447 | 410 | 427 |
| 300 | 0.0601 | 10,910 | 676 | 767 | 475 | 503 | 461 | 482 |
| 400 | 0.0470 | 9,670 | 776 | 891 | 535 | 572 | 523 | 548 |
| 500 | 0.0366 | 8,620 | 887 | 1,030 | 601 | 648 | 593 | 624 |
| 630 | 0.0283 | 8,070 | 1,016 | 1,192 | 672 | 735 | 672 | 713 |
| 800 | 0.0221 | 7,420 | 1,146 | 1,364 | 742 | 822 | 753 | 804 |
| 1,000 | 0.0176 | 6,810 | 1,281 | 1,547 | 807 | 909 | 832 | 898 |
| 1,200 | 0.0151 | 6,440 | 1,365 | 1,666 | 847 | 965 | 884 | 959 |
| 1,000(M) | 0.0176 | 6,760 | 1,348 | 1,602 | 849 | 945 | 871 | 933 |
| 1,200(M) | 0.0151 | 6,410 | 1,451 | 1,740 | 900 | 1,012 | 932 | 1,004 |
| 1,400(M) | 0.0129 | 6,220 | 1,559 | 1,885 | 952 | 1,082 | 998 | 1,082 |
| 1,600(M) | 0.0113 | 5,930 | 1,650 | 2,015 | 994 | 1,141 | 1,052 | 1,147 |
| 1,800(M) | 0.0101 | 5,690 | 1,727 | 2,127 | 1,028 | 1,191 | 1,098 | 1,204 |
| 2,000(M) | 0.0090 | 5,450 | 1,806 | 2,245 | 1,062 | 1,241 | 1,147 | 1,264 |
| 2,500(M) | 0.0072 | 5,140 | 1,955 | 2,468 | 1,124 | 1,338 | 1,237 | 1,378 |

(M) is Milliken conductor

***CONDITION :**

1. Ambient air temperature 40°C
2. Ground temperature 30°C
3. Thermal resistivity of soil 1.2 K-m/W
4. Depth of laying 1.0 m
5. Axial spacing between phase cable is 2xOD_{cable} or 2xOD_{duct}
6. Metallic shield and/or sheath bonded at single point or cross-bonded (no sheath circulating current).