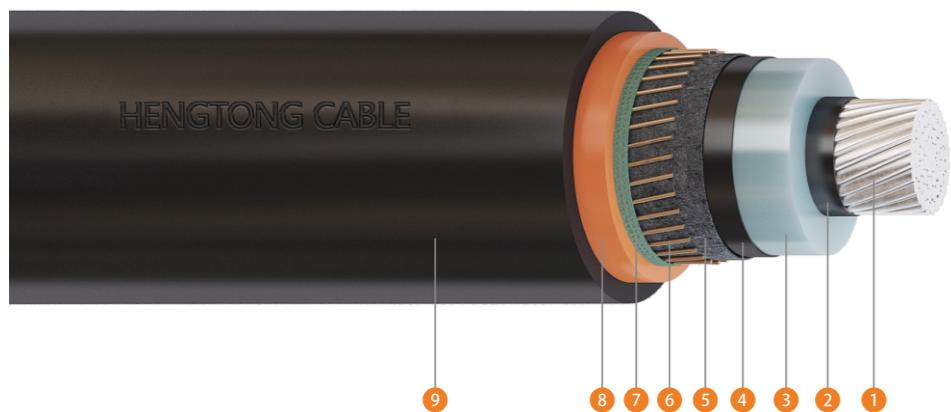


19/33kV Single Core AI/XLPE/CWS/PVC/HDPE



- ① Compacted Al conductor
 - ② Conductor screen
 - ③ XLPE insulation
 - ④ Insulation screen
 - ⑤ Semi conductive water-blocking tape
 - ⑥ Copper wire screen
 - ⑦ Non-hygroscopic tape
 - ⑧ PVC inner sheath
 - ⑨ HDPE outer sheath

Properties:

| | |
|--|---------------------------------------|
| Rated voltage | 19/33kV |
| Max. operating temperature of conductor | 90°C |
| Max. short-circuit operation temperature of conductor (5s Max. duration) | 250°C |
| Ambient temperature range for operating | from -40°C to +50°C |
| Relative air humidity at temperature lower than +35°C | up to 95% |
| Min. temperature for installing without preheating | +0°C |
| Standard | AS/NZS 1429.1 |
| Fault Level | up to 10kA/s or customer requirements |

Application:

Cables are designed for fixed installation, for laying in the ground, for indoor application and in cable ducts.

Structural Parameters:

| Nominal conductor area | Approx. diameter of conductor | Nominal thickness of insulation | Nominal diameter over insulation | Nominal screen area | No. & diameter of screen wire | Nominal diameter over wire screen | Nominal thickness of outer sheath | | Approx. overall diameter of cable | Approx. weight of cable | Max. allowable pulling force of conductor | Min. bending radius | |
|------------------------|-------------------------------|---------------------------------|----------------------------------|---------------------|-------------------------------|-----------------------------------|-----------------------------------|-------------|-----------------------------------|-------------------------|---|---------------------|-----------|
| | | | | | | | Inner layer | Outer layer | | | | During installation | Installed |
| mm ² | mm | mm | mm | mm ² | No./mm | mm | mm | mm | kg/km | kN | mm | mm | |
| 50 | 8.1 | 8.0 | 27.0 | 31.5 | 22/1.35 | 30.6 | 1.0 | 1.0 | 37.0 | 1356 | 2.0 | 920 | 550 |
| 70 | 9.8 | 8.0 | 28.7 | 44.4 | 31/1.35 | 32.3 | 1.0 | 1.1 | 38.7 | 1605 | 2.8 | 960 | 580 |
| 95 | 11.4 | 8.0 | 30.3 | 61.5 | 43/1.35 | 33.9 | 1.1 | 1.1 | 40.3 | 1904 | 3.8 | 1000 | 600 |
| 120 | 12.9 | 8.0 | 31.8 | 68.7 | 48/1.35 | 35.4 | 1.1 | 1.1 | 41.8 | 2100 | 4.8 | 1040 | 620 |
| 150 | 14.4 | 8.0 | 33.3 | 68.7 | 48/1.35 | 36.9 | 1.1 | 1.2 | 43.3 | 2236 | 6.0 | 1080 | 640 |
| 185 | 16.0 | 8.0 | 34.9 | 68.7 | 48/1.35 | 38.5 | 1.1 | 1.2 | 44.9 | 2402 | 7.4 | 1120 | 670 |
| 240 | 18.4 | 8.0 | 37.3 | 68.7 | 48/1.35 | 40.9 | 1.2 | 1.2 | 47.3 | 2655 | 9.6 | 1180 | 700 |
| 300 | 20.6 | 8.0 | 39.5 | 68.7 | 48/1.35 | 43.1 | 1.2 | 1.3 | 49.5 | 2907 | 12.0 | 1230 | 740 |
| 400 | 23.4 | 8.0 | 42.3 | 68.7 | 48/1.35 | 45.9 | 1.3 | 1.3 | 52.3 | 3253 | 16.0 | 1300 | 780 |
| 500 | 26.2 | 8.0 | 45.5 | 68.7 | 48/1.35 | 49.1 | 1.3 | 1.4 | 55.5 | 3692 | 20.0 | 1380 | 830 |
| 630 | 29.8 | 8.0 | 49.1 | 68.7 | 48/1.35 | 52.7 | 1.4 | 1.4 | 59.1 | 4228 | 25.2 | 1470 | 880 |
| 800 | 33.8 | 8.0 | 53.1 | 68.7 | 48/1.35 | 56.7 | 1.4 | 1.5 | 63.1 | 4872 | 32.0 | 1570 | 940 |
| 1000 | 38.5 | 8.0 | 56.3 | 68.7 | 48/1.35 | 61.2 | 1.6 | 1.6 | 68.2 | 5627 | 39.0 | 1700 | 1020 |

Electrical Characteristics:

| Nominal conductor area | Max. DC resistance of conductor at 20°C | Max. AC resistance of conductor at 90°C | | | Fault current carrying of conductor for 1 second | Fault current carrying of screen for 1 second | Insulation resistance at 20°C | Conductor to screen capacitance | Charging current per phase | Dielectric loss per phase | Maximum dielectric stress | Inductive reactance at 50Hz and 90°C | | | Screen DC resistance at 20°C | Zero sequence resistance at 20°C | Zero sequence reactance at 50Hz |
|------------------------|---|---|---------------|-------------|--|---|-------------------------------|---------------------------------|----------------------------|---------------------------|---------------------------|--------------------------------------|---------------|-------------|------------------------------|----------------------------------|---------------------------------|
| | | Trefoil touching | Flat touching | Flat spaced | | | | | | | | Trefoil touching | Flat touching | Flat spaced | | | |
| mm ² | Ω/km | Ω/km | Ω/km | Ω/km | kA | kA | MΩ/km | μF/km | A/km | W/km | kV/mm | Ω/km | Ω/km | Ω/km | Ω/km | Ω/km | Ω/km |
| 50 | 0.641 | 0.822 | 0.822 | 0.822 | 4.7 | 4.7 | 17000 | 0.142 | 0.848 | 64.4 | 4.04 | 0.155 | 0.169 | 0.213 | 0.602 | 1.24 | 0.1037 |
| 70 | 0.443 | 0.568 | 0.568 | 0.568 | 6.6 | 6.6 | 15300 | 0.158 | 0.943 | 71.7 | 3.81 | 0.145 | 0.160 | 0.204 | 0.427 | 0.873 | 0.0911 |
| 95 | 0.320 | 0.411 | 0.411 | 0.410 | 9.0 | 9.1 | 14000 | 0.173 | 1.03 | 78.5 | 3.65 | 0.139 | 0.153 | 0.197 | 0.309 | 0.630 | 0.0848 |
| 120 | 0.253 | 0.325 | 0.325 | 0.325 | 11.3 | 10.2 | 12900 | 0.186 | 1.11 | 84.4 | 3.53 | 0.133 | 0.148 | 0.191 | 0.276 | 0.533 | 0.0785 |
| 150 | 0.206 | 0.265 | 0.265 | 0.264 | 14.2 | 10.2 | 12000 | 0.200 | 1.19 | 90.7 | 3.43 | 0.128 | 0.143 | 0.187 | 0.276 | 0.486 | 0.0754 |
| 185 | 0.164 | 0.211 | 0.211 | 0.211 | 17.5 | 10.2 | 11200 | 0.214 | 1.28 | 97.1 | 3.34 | 0.124 | 0.139 | 0.182 | 0.276 | 0.444 | 0.0723 |
| 240 | 0.125 | 0.161 | 0.161 | 0.161 | 22.7 | 10.2 | 10200 | 0.236 | 1.41 | 107.1 | 3.24 | 0.118 | 0.133 | 0.177 | 0.276 | 0.405 | 0.0660 |
| 300 | 0.100 | 0.129 | 0.129 | 0.129 | 28.3 | 10.2 | 9400 | 0.256 | 1.53 | 116.1 | 3.16 | 0.114 | 0.129 | 0.172 | 0.276 | 0.380 | 0.0628 |
| 400 | 0.0778 | 0.101 | 0.101 | 0.101 | 37.8 | 10.2 | 8600 | 0.280 | 1.67 | 127.0 | 3.08 | 0.110 | 0.124 | 0.168 | 0.276 | 0.358 | 0.0597 |
| 500 | 0.0605 | 0.0796 | 0.0792 | 0.0788 | 47.2 | 10.2 | 7800 | 0.309 | 1.84 | 140.2 | 3.00 | 0.106 | 0.121 | 0.165 | 0.276 | 0.341 | 0.0565 |
| 630 | 0.0469 | 0.0629 | 0.0624 | 0.0617 | 59.5 | 10.2 | 7000 | 0.341 | 2.04 | 154.7 | 2.93 | 0.102 | 0.117 | 0.160 | 0.276 | 0.327 | 0.0534 |
| 800 | 0.0367 | 0.0507 | 0.0500 | 0.0490 | 75.6 | 10.2 | 6400 | 0.376 | 2.24 | 170.6 | 2.87 | 0.0983 | 0.113 | 0.156 | 0.276 | 0.317 | 0.0503 |
| 1000 | 0.0291 | 0.0392 | 0.0392 | 0.0396 | 94.6 | 10.2 | 5400 | 0.385 | 2.46 | 178.4 | 2.10 | 0.0892 | 0.104 | 0.130 | 0.276 | 0.293 | 0.0422 |

Current Ratings:

| Nominal conductor area | Continuous current-carrying capacity, A | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | In air | | | | | | In ground | | | In underground ducts | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |
| mm ² | Solid bond |
| 50 | 175 | 196 | 164 | 171 | 125 | 161 | 164 | 159 | 146 | 149 | 145 | 135 |
| 70 | 216 | 244 | 201 | 214 | 159 | 199 | 199 | 194 | 179 | 179 | 175 | 169 |
| 95 | 261 | 291 | 245 | 259 | 189 | 234 | 234 | 231 | 209 | 206 | 209 | 200 |
| 120 | 299 | 333 | 280 | 295 | 215 | 264 | 261 | 261 | 238 | 234 | 236 | 229 |
| 150 | 336 | 374 | 316 | 335 | 240 | 294 | 290 | 294 | 264 | 258 | 264 | 254 |
| 185 | 384 | 423 | 361 | 381 | 271 | 330 | 324 | 330 | 294 | 285 | 295 | 286 |
| 240 | 449 | 490 | 425 | 450 | 315 | 379 | 365 | 381 | 334 | 320 | 340 | 330 |
| 300 | 509 | 553 | 484 | 514 | 356 | 420 | 404 | 429 | 370 | 353 | 380 | 370 |
| 400 | 584 | 629 | 560 | 595 | 425 | 475 | 449 | 488 | 414 | 389 | 430 | 438 |
| 500 | 673 | 714 | 650 | 690 | 486 | 534 | 498 | 554 | 463 | 429 | 485 | 496 |
| 630 | 764 | 803 | 749 | 795 | 554 | 594 | 545 | 625 | 508 | 464 | 540 | 560 |
| 800 | 863 | 897 | 855 | 910 | 624 | 654 | 593 | 699 | 558 | 503 | 603 | 625 |
| 1000 | 998 | 1008 | 1007 | 1067 | 732 | 733 | 647 | 797 | 618 | 547 | 682 | 728 |