

AAC All Aluminum Conductor



A Viakable Company

CME Wire and Cable offers AAC concentric-lay-stranded conductors in single and multi-layer conductor designs to maximize the current carrying capacity for transmission and distribution projects that do not require the strength of ACSR type conductors.

Construction

AAC, a homogenous conductor, is concentric-lay-stranded conductor made from round aluminum 1350-H19 (extra hard) wires. AAC conductors are available in both single and multi-layer constructions to meet the current carrying capacity of the application.

Specifications

AAC conductors are manufactured in accordance with the ASTM specifications B230 and B231.

Features

The homogeneous construction of AAC conductors makes them a preferred choice for applications that do not require the strength of ACSR conductors and need to utilize the higher current carrying

capacity for overhead power transmission and distribution projects AAC conductors are also a good choice for coastal areas, where the environmental conditions are corrosive to ACSR conductors.



ALUMINUM CONDUCTOR

Technical Data

AAC

| Code Word | Size AWG or kcmil | Cross Sectional Area in ² | Class | Stranding | | Physical Properties | | | Electrical Properties | | | | | |
|------------|-------------------|--------------------------------------|-------|-----------|-------------|-------------------------------|-------------------|---------------------|-----------------------|----------------|----------------|-------------------|-----------------|---------|
| | | | | Number | Diameter in | Nominal Conductor Diameter in | Rated Strength lb | Nominal Mass lb/kft | Resistance | | | Reactance | | |
| | | | | | | | | | dc 20 °C Ω/kft | ac 25 °C Ω/kft | ac 75 °C Ω/kft | Capacitive MΩ/kft | Inductive Ω/kft | GMR ft |
| Peachbell | 6 | 0.0206 | A | 7 | 0.0612 | 0.184 | 563 | 24.6 | 0.6593 | 0.6725 | 0.8059 | 0.7660 | 0.1193 | 0.00555 |
| Rose | 4 | 0.0328 | A | 7 | 0.0772 | 0.232 | 881 | 39.1 | 0.4144 | 0.4227 | 0.5064 | 0.7296 | 0.1140 | 0.00700 |
| Iris | 2 | 0.0522 | AA,A | 7 | 0.0974 | 0.292 | 1350 | 62.2 | 0.2602 | 0.2655 | 0.3182 | 0.6929 | 0.1087 | 0.00883 |
| Pansy | 1 | 0.0657 | AA,A | 7 | 0.1093 | 0.328 | 1640 | 78.4 | 0.2066 | 0.2110 | 0.2527 | 0.6716 | 0.1061 | 0.00991 |
| Poppy | 1/0 | 0.0829 | AA,A | 7 | 0.1228 | 0.368 | 1990 | 98.9 | 0.1638 | 0.1671 | 0.2002 | 0.6550 | 0.1034 | 0.01110 |
| Aster | 2/0 | 0.1045 | AA,A | 7 | 0.1379 | 0.414 | 2510 | 124.8 | 0.1299 | 0.1326 | 0.1587 | 0.6346 | 0.1008 | 0.01250 |
| Phlox | 3/0 | 0.1317 | AA,A | 7 | 0.1548 | 0.464 | 3040 | 157.2 | 0.1031 | 0.1053 | 0.1259 | 0.6188 | 0.0981 | 0.01400 |
| Oxlip | 4/0 | 0.1662 | AA,A | 7 | 0.1739 | 0.522 | 3830 | 198.4 | 0.0817 | 0.0835 | 0.1000 | 0.6029 | 0.0955 | 0.01580 |
| Sneezewort | 250.0 | 0.1964 | AA | 7 | 0.1890 | 0.567 | 4520 | 234.4 | 0.0691 | 0.0706 | 0.0847 | 0.5860 | 0.0934 | 0.01710 |
| Valerian | 250.0 | 0.1963 | A | 19 | 0.1147 | 0.574 | 4660 | 234.3 | 0.0691 | 0.0706 | 0.0847 | 0.5860 | 0.0922 | 0.01810 |
| Daisy | 266.8 | 0.2095 | AA | 7 | 0.1952 | 0.586 | 4830 | 250.2 | 0.0648 | 0.0663 | 0.0794 | 0.5810 | 0.0926 | 0.01770 |
| Laurel | 266.8 | 0.2095 | A | 19 | 0.1185 | 0.593 | 4970 | 250.1 | 0.0648 | 0.0663 | 0.0794 | 0.5810 | 0.0915 | 0.01870 |
| Peony | 300.0 | 0.2358 | A | 19 | 0.1257 | 0.629 | 5480 | 281.4 | 0.0575 | 0.0589 | 0.0705 | 0.5700 | 0.0902 | 0.01980 |
| Tulip | 336.4 | 0.2644 | A | 19 | 0.1331 | 0.666 | 6150 | 315.5 | 0.0513 | 0.0527 | 0.0629 | 0.5600 | 0.0888 | 0.02100 |
| Daffodil | 350.0 | 0.2748 | A | 19 | 0.1357 | 0.679 | 6390 | 327.9 | 0.0494 | 0.0506 | 0.0606 | 0.5600 | 0.0883 | 0.02140 |
| Canna | 397.5 | 0.3124 | AA,A | 19 | 0.1447 | 0.724 | 7110 | 372.9 | 0.0435 | 0.0445 | 0.0534 | 0.5490 | 0.0869 | 0.02280 |
| Goldentuft | 450.0 | 0.3534 | AA | 19 | 0.1539 | 0.769 | 7890 | 421.8 | 0.0384 | 0.0394 | 0.0472 | 0.5390 | 0.0854 | 0.02430 |
| Cosmos | 477.0 | 0.3744 | AA | 19 | 0.1584 | 0.792 | 8360 | 446.8 | 0.0363 | 0.0373 | 0.0445 | 0.5330 | 0.0848 | 0.02500 |
| Syringa | 477.0 | 0.3744 | A | 37 | 0.1135 | 0.795 | 8690 | 446.8 | 0.0363 | 0.0373 | 0.0445 | 0.5330 | 0.0845 | 0.02540 |
| Zinnia | 500.0 | 0.3926 | AA | 19 | 0.1622 | 0.811 | 8760 | 468.5 | 0.0346 | 0.0356 | 0.0426 | 0.5310 | 0.0843 | 0.02560 |

The above data are approximate and subject to normal manufacturing tolerances. Where required, the compatibility with glands, connectors and accessories should be verified using actual dimensions of the product. Other sizes available upon request. Direct current resistance is based on 16.946 Ω·cmil/ft at 20 °C, 61.2% IACS with stranding increments as per ASTM B231.

Technical Data *continued*

AAC

| Code Word | Size AWG or kcmil | Cross Sectional Area (in ²) | Class | Stranding | | Physical Properties | | | Electrical Properties | | | | | |
|-------------|-------------------|---|-------|-----------|-------------|-------------------------------|-------------------|---------------------|-----------------------|----------------|----------------|-------------------|-----------------|--------|
| | | | | Number | Diameter in | Nominal Conductor Diameter in | Rated Strength lb | Nominal Mass lb/kft | Resistance | | | Reactance | | |
| | | | | | | | | | dc 20 °C Ω/kft | ac 25 °C Ω/kft | ac 75 °C Ω/kft | Capacitive MΩ/kft | Inductive Ω/kft | GMR ft |
| Dahlia | 556.5 | 0.4369 | AA | 19 | 0.1711 | 0.856 | 9750 | 521.4 | 0.0311 | 0.0320 | 0.0383 | 0.522 | 0.0830 | 0.0270 |
| Mistletoe | 556.5 | 0.4368 | A | 37 | 0.1226 | 0.858 | 9940 | 521.3 | 0.0311 | 0.0320 | 0.0383 | 0.522 | 0.0826 | 0.0275 |
| Meadowsweet | 600.0 | 0.4709 | AA,A | 37 | 0.1273 | 0.891 | 10700 | 562.0 | 0.0288 | 0.0297 | 0.0356 | 0.516 | 0.0818 | 0.0285 |
| Orchid | 636.0 | 0.4995 | AA,A | 37 | 0.1311 | 0.918 | 11400 | 596.0 | 0.0272 | 0.0282 | 0.0335 | 0.511 | 0.0811 | 0.0294 |
| Heuchera | 650.0 | 0.5102 | AA | 37 | 0.1325 | 0.928 | 11600 | 609.8 | 0.0266 | 0.0275 | 0.0324 | 0.510 | 0.0808 | 0.0297 |
| Verbena | 700.0 | 0.5494 | AA | 37 | 0.1375 | 0.963 | 12500 | 655.7 | 0.0247 | 0.0256 | 0.0305 | 0.504 | 0.0799 | 0.0308 |
| Violet | 715.5 | 0.5623 | AA | 37 | 0.1391 | 0.974 | 12800 | 671.0 | 0.0242 | 0.0252 | 0.0299 | 0.502 | 0.0797 | 0.0312 |
| Nasturtium | 715.5 | 0.5619 | A | 61 | 0.1083 | 0.975 | 13100 | 671.0 | 0.0242 | 0.0252 | 0.0299 | 0.502 | 0.0795 | 0.0314 |
| Petunia | 750.0 | 0.5893 | AA | 37 | 0.1424 | 0.997 | 13100 | 703.2 | 0.0230 | 0.0251 | 0.0286 | 0.498 | 0.0792 | 0.0319 |
| Arbutus | 795.0 | 0.6245 | AA | 37 | 0.1466 | 1.026 | 13900 | 745.3 | 0.0217 | 0.0227 | 0.0269 | 0.494 | 0.0780 | 0.0328 |
| Lilac | 795.0 | 0.6248 | A | 61 | 0.1142 | 1.028 | 14300 | 745.7 | 0.0217 | 0.0227 | 0.0269 | 0.494 | 0.0784 | 0.0331 |
| Cockscomb | 900.0 | 0.7072 | AA | 37 | 0.1560 | 1.092 | 16400 | 844.0 | 0.0192 | 0.0201 | 0.0239 | 0.484 | 0.0771 | 0.0349 |
| Magnolia | 954.0 | 0.7495 | AA | 37 | 0.1606 | 1.124 | 16400 | 894.5 | 0.0181 | 0.0191 | 0.0227 | 0.479 | 0.0763 | 0.0360 |
| Goldenrod | 954.0 | 0.7498 | A | 61 | 0.1251 | 1.126 | 16900 | 894.8 | 0.0181 | 0.0191 | 0.0227 | 0.479 | 0.0763 | 0.0362 |
| Hawkweed | 1000.0 | 0.7854 | AA | 37 | 0.1644 | 1.151 | 17200 | 937.3 | 0.0173 | 0.0182 | 0.0216 | 0.476 | 0.0759 | 0.0368 |
| Bluebell | 1033.5 | 0.8114 | AA | 37 | 0.1671 | 1.170 | 17700 | 968.4 | 0.0167 | 0.0177 | 0.0210 | 0.473 | 0.0756 | 0.0374 |
| Larkspur | 1033.5 | 0.8122 | A | 61 | 0.1302 | 1.172 | 18300 | 969.2 | 0.0167 | 0.0177 | 0.0210 | 0.473 | 0.0754 | 0.0377 |
| Marigold | 1113.0 | 0.8744 | AA,A | 61 | 0.1351 | 1.216 | 19700 | 1044.0 | 0.0155 | 0.0165 | 0.0195 | 0.467 | 0.0744 | 0.0391 |
| Hawthorn | 1192.5 | 0.9363 | AA,A | 61 | 0.1398 | 1.258 | 21100 | 1117.0 | 0.0145 | 0.0155 | 0.0183 | 0.462 | 0.0737 | 0.0405 |
| Narcissus | 1272.0 | 0.9990 | AA,A | 61 | 0.1444 | 1.300 | 22000 | 1192.0 | 0.0136 | 0.0146 | 0.0173 | 0.457 | 0.0729 | 0.0418 |
| Columbine | 1351.5 | 1.0610 | AA,A | 61 | 0.1488 | 1.340 | 23400 | 1266.0 | 0.0128 | 0.0138 | 0.0163 | 0.452 | 0.0722 | 0.0431 |
| Carnation | 1431.0 | 1.1240 | AA,A | 61 | 0.1532 | 1.379 | 24300 | 1342.0 | 0.0121 | 0.0132 | 0.0155 | 0.447 | 0.0715 | 0.0444 |
| Coreopsis | 1590.0 | 1.2480 | AA | 61 | 0.1614 | 1.454 | 27000 | 1489.0 | 0.0109 | 0.0120 | 0.0141 | 0.439 | 0.0705 | 0.0468 |
| Jessamine | 1750.0 | 1.3750 | AA | 61 | 0.1694 | 1.525 | 29700 | 1641.0 | 0.0099 | 0.0111 | 0.0129 | 0.432 | 0.0693 | 0.0490 |
| Cowslip | 2000.0 | 1.5700 | A | 91 | 0.1482 | 1.630 | 34200 | 1873.0 | 0.0087 | 0.0099 | 0.0115 | 0.421 | 0.0677 | 0.0525 |
| Lupine* | 2500.0 | 1.9620 | A | 91 | 0.1657 | 1.823 | 41900 | 2365.0 | 0.0070 | 0.0084 | 0.0097 | 0.404 | 0.0652 | 0.0588 |

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Direct current resistance is based on 16.946 Ω-cmil/ft at 20 °C, 61.2% IACS with stranding increments as per ASTM B231.

* Contact CME to review availability.